THE

MEDICAL EXAMINER,

AND

RECORD OF MEDICAL SCIENCE.

NEW SERIES.—NO. LXIX.—SEPTEMBER, 1850.

ORIGINAL COMMUNICATIONS.

ON ACCLIMATION. *An Inaugural Essay presented for the Degree of Doctor of Medicine in the University of Pennsylvania.* By PHILIP C. WILLIAMS, M. D., of Winchester, Virginia.

[Concluded from page 450.]

As already intimated, there are great differences, both in an individual and national point of view, in the readiness of acclimation and the susceptibility to disease in a new climate.

It is a matter of common observation, says Levy, (*op. cit.* p. 528) that Northerners, going to the West Indies, suffer from yellow fever by the direct influence of an elevated temperature. He also states that delicate persons of lymphatic temperament have less to fear in a hot climate, than robust, energetic constitutions.

Another cause of mortality, so graphically described by the same author, is the dread or panic that takes possession of their minds, rendering them an easy prey to the violence of the epidemic.

But can none of these disastrous results be avoided? Experience shows that a strict observance of the following simple hygienic rules, may greatly mitigate, if not entirely prevent many of the diseases to which immigrants are now subject.

Bearing in mind the strong predisposition to inflammatory diseases exhibited by strangers in a hot climate, we readily see the importance of avoiding every thing that, in the least, tends to increase this predisposition. Hence it becomes of the

highest importance to restrain the activity of the digestive and respiratory functions. With this view, we must begin as early as practicable, to change our mode of living, and endeavor to accustom our systems to the diet and habits which we must eventually adopt in order to secure happiness and comfort. Persons about to go to a hot climate, should commence this restriction in diet, &c., even before leaving home; and by all means should they exercise the strictest caution during their voyage; for it has been ascertained that the health of such persons is very materially affected by their habits during this period. (Johnson *op. cit.*) Having arrived at their destined port, they should bear up against those feelings of dread and alarm of which I have spoken; at the same time taking care not to fall into the opposite extreme of rashness and imprudence. They should be cautious and temperate both in food and drink. The *diet* should consist principally of vegetables, conjoined with a *small quantity of meat.*

Owing to the very excited and irritable condition of the intestinal canal, the use of stimulating food, or of condiments of any kind, should be avoided; so, also, should the new comers refrain from incautious indulgence in fruits, for to this cause has been attributed many of the diseases, particularly the cholera-morbus, of these countries. This danger is greatly increased by the free use of fruits in the evening. This remark applies with equal force to suppers, or to any unusual article of food taken at this hour.

The drinks should consist either of pure or slightly acidulated water, of water mixed with milk, or pure milk, when it agrees with the person using it. Buttermilk is preferred by some. Currie and Curtis recommend the use of stimulating drinks, pushed even to slight intoxication. There need, I think, be but little hesitation in condemning this practice. If such drinks be injurious when used in cold climates, how much more so must they be, when acting upon a system already overstimulated by a hot climate? I am satisfied that many of the disasters formerly attending migration to hot climates, can be traced to this unfortunate practice.

As this belief is opposed to the teaching of some, and the practice of many more, it may be well to examine the opinions of medical men who have had the most ample opportunities of testing the effects of alcoholic drinks, as a part of tropical hygiene. Johnson in his "Tropical Hygiene," says to those who go to hot climates: "the nearer we approach to a perfectly aqueous regimen in drink,

during the first year at least, so much the better chance have we of avoiding sickness, and the more slowly and gradually we deviate from this afterwards, so much the more retentive will we be of that invaluable blessing—health." The celebrated Dr. Robert Jackson, physician general to the British army, thus speaks of himself: "I have wandered a good deal about the world, and never followed prescribed rules in any thing; my health has been tried in all ways; and by the aid of temperance and hard work, I have worn out two armies in two wars, and probably could wear out another, before my period of old age arrives. I eat no animal food, drink no wine, nor malt liquors, nor ardent spirits of any kind."

Dr. Mosely (on Tropical diseases,) says, "I aver from my own knowledge and custom, as well as from the custom and observation of others, that they who drink nothing but water, or make it their principal drink, are but little affected by the climate and can undergo the greatest amount of fatigue without inconvenience." "The hardy Arabs of the desert have no habitual drink but water. (Journal of Health, Vol. 2, p. 49.)

Dr. Marshall, the Deputy Inspector of Hospitals, observes, "I have myself marched on foot with troops on actual service, in a tropical climate whose mean temperature was considerably higher than that of Jamaica, without any other beverage than water and occasionally a cup of coffee. So far from being calculated to assist the human body in enduring fatigue, I have always found that the strongest liquors are the most enervating, and this in whatever quantity they are consumed." (*Op. cit.* p. 241.) Were it necessary the argument might be still further strengthened by other equally cogent examples; but enough has been said to show the deleterious effects of the use of ardent spirits as a part of tropical, and may we not say of any kind of hygiene?

We do not, on the other hand, mean to recommend the copious and indiscriminate use of very cold water. This drink, so refreshing in small quantities, is attended with considerable risk if the person have been enfeebled by prolonged exercise or by disease. On this account it should be used moderately in the latter part of the day. Cold or even iced water, in limited quantity, is both reviving and salutary, in the heat of the day, when the system is *moderately* excited. Its refreshing coolness relieves, or tends to diminish the heat of the stomach, and in this way somewhat abates the feeling of languor and debility which are the constant attendants upon pro-

tracted heat. On these accounts we hail with delight the introduction of ice as an article of commerce, thus conferring so great a boon upon the inhabitants of southern latitudes.

Of *Dress.*—It is desirable to lay aside linen and put on cotton garments, as the latter afford a much better protection against the vicissitudes of temperature, to which all hot climates are liable. If, as is frequently the case, the temperature at night be much lower than during the day, it would be advisable to avoid exposure at this time, or make some addition to the clothing. Persons obliged to labor in the open air and who perspire freely, will find it safer if not indispensably requisite, to wear next the skin, light flannel garments, which should be frequently changed, and well aired and sunned before being again put on.

There are many well authenticated proofs of the efficacy of this kind of clothing, in protecting its wearers from the deleterious effects of hot climates under which many have sunk who were not thus provided for. An interesting example to this effect is related by Dr. Combe, in his "Principles of Physiology." Capt. Murray, of the British man-of-war Valorous, preserved the health of his crew, numbering one hundred and fifty men, during a cruize in which he visited every island of the West Indies and the ports of the Gulf of Mexico, by making his men wear flannel next the skin, and by keeping the "between decks dry by means of stoves."

Bathing daily in cold water is eminently useful, by guarding the system against vicissitudes of temperature, as well as by tending to restrain excessive perspiration. The best time for its use is upon rising, in the morning, or at noon, if the system have been moderately stimulated by exercise. Andral, however, highly recommends its use in the evening, as it may induce sleep; for, as already mentioned, many suffer extremely from wakefulness. It may be well to caution against its use at this time, if the system have been worn out by the fatigues of the day, as it is thereby rendered unable to react under the depressing influence of a cold bath. With this precaution, it may, no doubt, prove beneficial. If, however, the person's constitution be at all times too weak to endure the bath, he may advantageously resort to sponging the whole surface of the body with salt and water, and follow this by careful and thorough friction with a coarse towel.

We ought to recommend the observance of regular and early hours—that is to retire to bed, and to rise early. To sleep

upon a mattress of moss, hair, or something similar, adds much to one's comfort.

These habits should be strictly observed for two or three years, after which the system generally becomes so modified as to bear, if not to require, a fuller and more nutritious diet. But, extreme caution should be exercised in making any change from the plain and simple diet and habits that were adopted during the first period of acclimation.

I have spoken in considerable detail of the effects and hygiene of Southern acclimation, though not more so, I trust, than the interest and importance of the subject demand.

Equally striking as these, are the effects of a northern latitude upon a southern constitution. We will therefore now, for a short time, examine northern acclimation.

We have seen that the effects of moderate cold are, indirectly, to give greater activity to the nutritive functions; we have seen that it increases the activity of the circulation and respiration; so that all of these may assist in the development of animal heat, sufficient to maintain the temperature requisite for the healthy action of the different parts of the economy. On the other hand, we have seen, that, in warm climates, the demand for the evolution of heat is very limited, owing to the high temperature of the surrounding atmosphere. Hence we find calorification modified accordingly.

We may readily imagine, that, if one changes a southern for a northern latitude, this process and its dependencies must undergo a change—must be rendered more active, and thus the lungs, in order to supply the requisite quantity of oxygen, become stimulated to greater activity. This undue continued stimulation must result injuriously upon so delicate an organ. Of this fact we have a familiar illustration in the frequent deaths occurring in our menageries, among the animals of tropical regions; and *post-mortem* examinations reveal pulmonary, and generally tuberculous diseases.

We see the same tendency exhibited by all strangers who visit cold climates, or even by the natives of those regions who have been for a few years living in a warmer climate. Europeans, for example, who have lived some time in southern latitudes, are, on their return home, prone to be carried off, either by pneumonia or phthisis, or by the chronic diseases which they had contracted being changed

into the acute form. Many examples of this tendency to tuberculosis, are afforded in the negroes who live far removed from tropical climates. Pearson relates several instances in which boys sent from Sierra Leone to England to be educated had died, in two or three years, of phthisis.

Statistical reports show that, in Canada, the number of deaths among the negroes from consumption, is such that, were not their numbers increased by immigration, the whole population would disappear in a few years.

The modifications of climatic influence, depending upon race, are very interesting, but unfortunately generally overlooked. "We find, then, that the number of deaths among the inhabitants of New York, of African descent, is twice as numerous as that among the whites of the same city. In Philadelphia the proportion is about three to four.

"If next we take particular classes, represented by equal numbers of white and black men, as soldiers for instance; in the same place, subject to the same discipline, and supplied with the same rations, we shall discover that the black troops are, in terrible disproportion, the greatest sufferers from disease, and furnish the largest number of deaths. Still following M. Boudin we learn, that, in Southern Europe, as at Gibraltar, the mortality amongst the blacks is three times that of the white soldiers; both of these corps being strangers to the soil. This immense disproportion is owing to the predominance of diseases of the respiratory apparatus.

"The mortality from pulmonary diseases among the negro soldiers in the British foreign posts is as follows: (The proportion is for every thousand.)

"On the western coast of Africa, it is 6.5; in Honduras, 8; in the Bahamas, 9.7; in Jamaica, 10.5; in the Mauritius, 12.5; in the Wind-ward Islands, 16.5; in Gibraltar, 35.5." (Pennsylvania Journal of Prison Discipline, January, 1850, p. 111.*

[* Since writing the above our attention has been directed to an article in the *Southern Medical Journal*, November 1, 1849, by Dr. Pendleton, of Sparta, Georgia, in which the views we have advanced find confirmation. It is republished in Dr. Fenner's *Southern Medical Reports*. It will be perceived, says Dr. Pendleton, that the whites are more subject to diseases of the *primæ viæ* than the blacks, a fact easily accounted for by their different modes of living, both as to exercise and diet. But upon what etiological principle is the latter race so much more subject to pulmonary affections? A little further on he says: the blacks, notwithstanding their greater exposure, seem to be less liable than the whites to periodic fevers, and more readily recover.]

I have neither time nor space to pursue this interesting subject as far as inclination prompts. I trust, however, that enough has been said, to show that the effects of a northern climate upon a southern constitution, are of an injurious, if not of an absolutely destructive character; and we are compelled to admit that there is *no such thing as a complete northern acclimation.*

In the South, if a person escapes for a few years, he may probably enjoy good health, at least sufficiently so to render life comfortable. But such is not the case in the North; for if the lungs be once seriously injured, the continuance of the cause must necessarily only increase the disease of these organs.

Much may, nevertheless, be accomplished, much suffering warded off, by a proper attention to dress, which should always be sufficiently thick to maintain the requisite temperature of the body. Flannel should be constantly worn next the skin, and the quantity of other clothing regulated according to circumstances, so as never to permit an abiding sense of chilliness.

The *food* should be as nutritious as possible, and should consist of animal and azotized substances, in order that the system may be supplied with a regular and abundant supply of fat, for this is found to be the most efficacious of all agents in the development and retention of animal heat. Proper limits are required even to this kind of food; and we should be careful to avoid all excesses, for this would defeat the object in view. Extreme care should be taken to keep the digestive and other functions in an active normal state. Not much is, I believe, to be affected by drinks. Some, however, recommend the use of tea, coffee, and even alcoholic liquors. The most that can be claimed for the last mentioned drinks, and particularly for distilled liquors, is the very moderate use of them. But actual experiment, both on sea and land, affords results by no means favorable even to this view. "Experience," says Dr. Bell, ('Baths and the Watery Regimen,' p. 189,) "has now corrected the once vulgar and prevalent opinion, that drinks more stimulating than water, and also of an intoxicating nature, such as ardent spirits, are necessary to enable men to bear great climatic extremes and vicissitudes. Dr. Miller, of New York, had, long before the temperance reformation, pointed out the instructive fact, that 'in all the frequent attempts to sustain the intense cold of winter in the Arctic regions, particularly in Hudson's bay, Greenland, and

Spitzbergen, those crews or companies which had been well supplied with provisions and liquors, and thus enabled to indulge in indolence and free drinking, have generally perished; while at the same time the greatest number of survivors have been uniformly found among those, who were accidentally thrown upon inhospitable shores, destitute of food and spirituous liquors, compelled to maintain an incessant struggle against the vigor of the climate, in procuring food, and obliged to use water alone for drink.'" These facts are too decisive to need any comment.

Cold bathing, if properly borne by the system, will be found very serviceable, but still more so will be sponging the skin with salt and water, and afterwards subjecting it to thorough friction with a coarse towel.

On the subject of hygiene, national habits merit our attention, if not our imitation. With a winter in our Northern States almost as cold as that of Russia or Scandinavia, we ought not to lose sight of the precautions by which the people of those countries protect themselves, both by the arrangement of their houses and their clothing.

The regular use of the vapor bath deserves consideration and attention. On this point I refer to Dr. Bell, (*op. cit.*) One good effect, at least, from this practice, must be to excite the skin to a proper discharge of its functions, and thus relieve the lungs and kidneys—organs, which we have seen, are so severely and injuriously tasked in cold climates.

The state of the general health should be most carefully watched, and the slightest tendency to disease particularly of the lungs, promptly combated.

We next come to the consideration of acclimation as modified by *moisture.* This, embracing as it does, the interesting, but extensive and complicated question of miasm, is too vast a field to be, in this place, fully explored. There are, however, some general considerations that demand attention.

In a preceding portion of this essay, I exhibited the picture drawn by Hippocrates, of the modifying influence of moisture. This is two-fold, and subject to modifications, according as it is associated with cold or with heat. To both of these I will briefly allude. The lungs and kidneys, which as we have said are in a state of minimum activity in a warm climate, are

severely tasked in a cold and moist one. This is not so much owing to the direct operation of cold, as to its indirect effects, manifested through the enfeebled and impeded functions of the skin, by which these organs—the lungs and kidneys—are forced to extraordinary efforts to eliminate effete matters from the body. Thus it is that we see so great a tendency to renal diseases, and to tuberculosis and scrofulosis, which is exhibited in cold, and even during the winter seasons of temperate climates. This condition is greatly aggravated by a combination of moisture with cold, and to their joint agency may be attributed a long list of anginose, tracheal and bronchial affections.

Equally deleterious, though in an opposite mode, is the union of moisture and heat. This is supposed to be the most favorable condition for the development of miasmata. But as this is becoming, more and more, a controverted point, I shall not pretend to discuss it here.

Whatever may be the decision of this point, we may be quite sure of one thing, viz. that a hot and moist atmosphere is peculiarly depressing in its operation upon the functions, and renders the system *extremely susceptible, even if it does not originate,* attacks of fever, or of hepatic and splenic diseases. These effects are most liable to be experienced during the night, in hot and marshy regions. Among many illustrations may be quoted the following, as related by Dr. Lind. In 1766 the Phœnix, ship of war, was returning from the coast of Guinea. The officers and ship's company were perfectly healthy, till they touched at the island of St. Thomas. Here nearly all of them went on shore. Sixteen of the number remained for several nights on the island. *Every one* of these contracted the disorder (fever), and thirteen of the sixteen died. The rest of the crew, consisting of two hundred and eighty men, went in parties of twenty or thirty on shore in the day, and rambled about the island, &c., but they returned to the ship at night; *and not one of these who so returned, suffered the slightest indisposition.* Exactly similar events occurred the following year, with the same ship, at the same place, where she lost eight out of ten men, who imprudently remained out all night on shore, while the rest of the crew, who after spending the greatest part of the day on shore, always returned to their vessel before night, continued in perfect health, (Watson's Practice p. 450, Am.

edit.) Did time allow, I might refer to other facts to enforce the same point; but the above are sufficiently conclusive.

Another peculiarity of these situations is to develope diseases to which persons were predisposed, but in whom they had hitherto lain dormant. The following affords a striking illustration. Twenty eight soldiers being exposed, at work, in a malarious district, were all taken sick; not with the same disease, but three with cholera morbus, five with dysentery, four with yellow fever, and the remaining sixteen with pernicious intermittent fever." (Johnson.) With this necessarily imperfect description of the effects of moisture, I must hasten on to the subject of protective hygiene.

Persons going to such climates should carefully avoid all exposure to night air; they should not go out early in the morning, nor remain out late in the evening; and they should only go out after the sun has risen sufficiently long to dissipate the fogs and mists and to rarefy the atmosphere. They should avoid all exposure to wet; and refrain from all excesses in food or drink. Their diet should be nutritious; their drinks simple and pure. If the water for drinking be impure, it should be purified and filtered before being used. They should attend most strictly to their general health; to personal cleanliness; and should avoid every thing tending to debilitate and exhaust the system. Some recommend that, for a while at least, the system be kept under the slight influence of some tonics, particularly bark, or, still better, quinine.

After having, for a time, observed these precautions, and having overcome the primary excitement incident to hot climates, a more liberal diet may be adopted, accompanied with the use of condiments, such as capsicum, ginger, &c. It will be safer to continue a vegetable diet, combined with a small proportion of meat, until the acclimation be, in great measure, completed. It is then that the colonists may imitate, with advantage, the customs and habits of the natives, and of those who are inured to the climate.

But, in addition to these precautions, there is another of vital importance, viz. the selection of a site, exposure, &c., of the dwelling. They who are attracted to these countries, merely for the sake of commerce, and whose stay is short, are not so much concerned with this; nor, on the other hand, are they generally able to exercise such a choice. They who intend to become residents should give this subject their most careful consideration.

They often have the choice of situation—whether a low or a rising ground, a valley or a hill, is to be the site of their future abode. In this case they should always select an elevated and dry position. If this cannot be obtained—if they are compelled to build upon a moist situation, near a river, or stream, or still worse, near a stagnant pool—they must endeavor to discover the prevalent directions of the winds, and so place and arrange their houses that the wind shall blow against that side of the house containing few or no windows. If there be windows on that side they should never be opened till the sun has risen, and dissipated the mists, fogs, &c.; after which they may be thrown open, so as to ventilate the house. They should endeavor to screen it from these winds, by an intervening hill or strips of woods. If foiled in all these endeavors, and even though they may obtain these advantages, without the desired result, they may with great benefit keep their houses always dry and warm, either by furnaces or other convenient methods. There are many well attested instances in which persons have maintained perfectly their own health and that of their families, by this means, in the most sickly regions. In this way persons have been enabled to enjoy good health, even in the "Pontine marshes," and the "Campagna di Roma," and in otherwise uninhabitable regions. The sleeping apartments should never be on the ground floor; they should always be well aired and ventilated. For a fuller and more satisfactory exposition of this important subject, see Levy *op. cit.* art. "*Des Habitations.*"

The last variety of acclimation that I shall notice, is that incident to situations considerably elevated above the level of the sea.

As before stated, this elevation gives rise to greatly accelerated respiration and circulation; to pulmonary congestions; to dyspnœa; and sometimes to hæmoptysis and other hemorrhages.

It would seem, from the description of their feelings, by Gay Lussac and others who have ascended to great heights in balloons, that many of the effects attributed by travellers to their elevation above the level of the sea, are due, more to the fatigues of the ascent and the benumbing effects of cold than to a rarefied atmosphere. It is stated by some author whose name I forget, (possibly Humboldt,) that if we remain perfectly still on these heights, there is little or no disturbance of the respiration, or circulation; but if exercise, particularly when at all violent, be taken, all the symptoms above mentioned are fully developed.

This seems to show that the accelerated respiration, &c. must be referred to some other cause than cold; for if this were the explanation, these symptoms ought to be most violent when the person is at rest!

When we consider that the blood requires a certain proportion of oxygen to become properly oxygenated; and that in these situations there is a diminution of the requisite quantity of oxygen, we can easily conceive the necessity for the increased acceleration of the respiration to supply the deficiency. Hence we may have little hesitation in ascribing many of these effects to the rarefaction of the air, as well as to the "benumbing influences of the cold."

This variety of climate is only of interest on account of the fact that phthisical patients were formerly advised to remove to such situations. When we bear in mind, however, the variable temperature, and the excessively cold, damp and violent winds, to which these situations are liable, we cannot fail to admit the injurious effects of residence on them. For persons going to such places, it is necessary that they should adopt the same hygienic and other recommendations, suited to cold climates generally.

Did time permit we might speak of the various climates met with in the different parts of the United States; and particularly might we note the peculiarities of the climate of our middle States, in which occur the two extremes of great cold in winter, and excessive heat in summer.

These conditions call for different and almost opposite hygienic precautions, of which many, may I not say most, are neglected. Necessity forces us to make the requisite changes in clothing during the extreme seasons; but in the regulation of our food we still fall far short of the demands of a wise hygiene.

During the period of infantile life, the process of acclimation must be undergone at each return of our extreme seasons. To these extremes and transitions is to be traced the melancholy frequency of deaths occurring among infants—during the winter, from diseases of the pulmonary organs; during the summer from diseases of the intestinal canal.

Most fortunate would it be for the welfare of infants, if the profession regarded, and the mother understood, the peculiarities of our climate and the laws of acclimation.

Case of Extra-Uterine Pregnancy. Reported by CARTER P. JOHNSON, M. D., Professor of Anatomy and Physiology in the Medical Department of Hampden Sidney College, Richmond, Va.

The patient was a negro woman about 30 years of age, admitted into the Infirmary of the Medical College, from Souria County, Va., on May 22d. The following history of her case, up to the date of her admission, has been kindly furnished me, since the operation, by Dr. William Beadles, her attendant Physician:

She had enjoyed good health until the commencement of the present affection. She has been married for several years, but has borne no children, though her catamenia had always made their appearance regularly. She menstruated for the last time about the 1st of December, 1848. On the 18th of December, she was taken with violent pain in the lower portion of the abdomen, recurring in paroxysms and accompanied by nausea and vomiting. The affection was referred by the physician in attendance "to the uterus or its appendages, and was quite relieved in the course of three or four days by pursuing a moderately antiphlogistic and sedative treatment." For several months after this period, she had repeated attacks of a similar character, and during the whole of the ensuing year, she continued very unwell and poorly. In the mean time a tumor made its appearance in the hypogastric region, and went on gradually to increase in the same manner as the uterine tumor in ordinary cases of pregnancy. Her breasts also enlarged, and towards, the latter period of her supposed pregnancy, secreted a certain amount of milky fluid.

During the month of August, 1849, about the time she expected her confinement, she experienced a sanguineous discharge from the vagina, accompanied by considerable pain. Thinking herself in labor, she summoned a midwife, and made her preparations in anticipation of the immediate occurrence of the expected event. The pain, however, at one time severe, gradually subsided and disappeared entirely in the course of three or four days. The discharge, which was attended with the escape of coagula, continued about a week. About three weeks after this, she was again seen by Dr. Beadles, in connection with Dr. Fox, and "was found confined to her bed and helpless, mainly on account of having *phlegmasia dolens*," of which she was relieved in the course of

a few weeks. From that time to the date of her admission, she has been occasionally annoyed by pains in the loins and in the region of the tumor. Within the last few months, these have very greatly diminished, and since the beginning of the present year, her general health has improved sufficiently to allow her to walk about the neighborhood at short distances, not exceeding a mile. She has frequently felt what she conceived to be the movements of a child, and she states that she has *continued to feel them until within six weeks past.*

At the date of her admission, the case presented the following symptoms. Her general appearance was healthy, her skin soft, pulse natural, secretions generally normally performed. The abdomen presents a large, globose tumor, remarkably uniform, looking very much like a huge mammary gland, the retracted nipple being represented by the umbilicus. The tumor is more prominent than the uterine tumor at the ninth month of utero-gestation, and occupies a higher position in the abdomen. When the patient is in the erect position, the integuments are rendered very tender, and the tumor is with difficulty circumscribed; in the recumbent posture, the integuments being somewhat relaxed, it may be moved slightly in all directions, and is discovered evidently not to fill up the entire peritoneal cavity. Upon succussion, fluctuation is discovered, though very obscure. The tumor presents *no irregularity* of surface, and impinges *equally* on both sides of the median line.

An examination *per vaginam* gave no indications of any disease of the uterus or of previous impregnation. A very obscure fluctuation was perceptible through the walls of the vagina just behind the posterior lip of the os uteri.

Upon consultation with my colleagues, Professors Gibson and Tucker, (to both of whom I am very much indebted for valuable assistance in the subsequent operation,) it was determined, as the case was very obscure, and neither of us was fully satisfied as to its true nature, to make an exploratory incision into the tumor, and to be guided in the subsequent steps of the operation by the information which such an incision would afford us.

Accordingly, on the 25th of *May*, at 11 o'clock, assisted by Professors Gibson and Tucker, and Dr. Peticolas, and in the pre-

sence of a number of medical students, I proceeded to the operation.

The patient being placed upon her back, an incision was made about one inch below the umbilicus in the linea alba, through the integuments and superficial fascia for the space of about fifteen lines. The tendons of the abdominal muscles were then carefully incised until they were completely divided; the finger was then passed in, and came in contact with what I took to be the omentum very much thickened, on breaking through which, an entrance was effected into a cavity, from which from twelve to sixteen ounces of sero-purulent matter was discharged. On examining the interior of the cavity with the finger, a solid body was felt on both sides of the median line, distinctly moveable; the incision however was not large enough to permit a satisfactory examination as to its character.

At this stage of the operation, a consultation was again held, and at the suggestion of Dr. Gibson, it was determined to prolong the incision so as to enable us to extract the contents of the cavity, if practicable. Before proceeding further, an attempt was made to place the patient under the influence of chloroform, but was desisted from at her earnest entreaty. I then carried the incision downwards to within an inch of the pubes, and upwards about two inches above the umbilicus, when upon opening the lips of the wound a large and well grown fœtus was discovered compactly stowed away in this extra-uterine cavity. The head of the child looked towards the left iliac fossa, the breach towards the right hypochondriac region, the back towards the abdomen of the mother; the thighs were flexed upon the abdomen, and the legs upon the thighs. With but little difficulty, the fœtus was separated from its singular resting place, and delivered. The cord, which was entirely flaccid and bloodless, attached itself to the inner portion of the sac along the lower part of the anterior parietes of the abdomen on the left side. The placenta was atrophied to a considerable extent, and was attached along almost the whole of the anterior and upper portion of the sac. Its removal constituted the next stage in the operation, and was accomplished by separating, first those portions along the edges of the incision, by insinuating the fingers between them and the sac to which they were attached, and then effecting its removal precisely as we would remove an adher-

ing uterine placenta. The vessels passing between the placenta, and the walls of the containing sac were very numerous, but were, and apparently had been, for some time, completely impervious, presenting, as the placental mass was torn off, the appearance of small fibrous cords.

Having separated the placenta, the cavity which contained the fœtus and its appendages was found to be surrounded by a very dense sac of plastic lymph, intimately adherent to the parietes of the abdomen anteriorly, but superiorly, posteriously and inferiorly, completely separating the cavity and its contents from the abdominal and pelvic viscera.

During the operation, an artery, a lateral branch of the left epigastric, about the size of the epigastric under ordinary circumstances, was cut and required a ligature.

Having cleansed the cavity as thoroughly as possible, the edges of the wound were brought together by sutures and adhesive straps, a large bandage firmly applied, and the patient put to bed in a very comfortable condition, having borne the protracted operation with great fortitude. She was ordered seventy-five drops of laudanum in a little brandy and water.

The child was very fully developed and perfectly formed, except that both feet presented "talipes volgus," the left slightly, the right to a considerable extent. The posterior fontanel was completely closed, the anterior was nearly as much open as usual. Its weight, with the placenta, which weighed only a few ounces, was *nine pounds*. It had evidently been dead for some time, as was inferred from the state of the placental bloodvessels, from the cod, from the condition of the skin, the cuticle being separated in mrost parts of the body, and from the eyes, which were deeply sunken in the orbits. There was no fœtor.

At 7 o'clock P. M. patient was quiet, had not slept, but was comfortable—pulse 94; skin cool and moist.

May 26th. Passed a quiet night, sleeping during the latter part; skin moist but warm; tongue moist and clean; pulse 102, soft and compressible; abdomen, soft and not tender to the touch; severe soreness about the wound; at 9 P. M. sleeping quietly; respiration good.

27th. Passed a comfortable night, sleeping throughout; per-

spired freely; tongue moist and furred; pulse 120; respiration somewhat hurried; abdomen flaccid and entirely free from pain; wound looks well. At 12 o'clock had slight chilliness; 9 o'clock P. M., perspiring freely; pulse 140; respiration more hurried; severe uneasiness in head; no pain in the abdomen. Ordered Calomel grs. xv., Rhubarb grs. x. M. To be taken immediately.

May 28th. Has been quiet during the night, though she has slept but little; pulse 120; skin soft and warm; tongue cleaner and moist; abdomen flaccid and free from pain; wound looks well and is discharging slightly; medicine has not operated. Ordered enema of gruel and sweet oil. 9 o'clock P. M. Enema has brought away two copious and consistent passages, giving great relief to the patient; head easy; pulse 120; skin moist; respiration 30.

29th. Slept well after 12 o'clock. This morning had another consistent evacuation; feels very comfortable; pulse 112; tongue moist; skin cool, and less tendency to perspiration; slight giddiness of head; no pain of the abdomen; wound looks well and discharges moderately; in the evening pulse rose to 120.

30th. Slept well; countenance improving; pulse 106; tongue cleaner; wound discharging, but not abundantly; appetite improving; no uneasiness of head; bowels opened during the day.

31st. and *June* 1st. The ligature and all the sutures removed.

5th. Has continued to improve in every respect up to this time, with the exception of slight sore throat, which is now relieved. The wound is discharging freely healthy pus, the edges have a florid and healthy appearance; pulse 96; ordered infusion of hops, a wine-glass full three times a day.

8th. Appetite improving; wound looks well; at its upper portion the opposite edges have adhered; discharges a considerable quantity of healthy pus; pulse 98 and more feeble. Ordered Vallet's proto-carbonate of iron 5 grs. three times a day, more nutritious animal diet, and the wound to be dressed with dilute solution of chlorinated soda.

9th. Bowels been affected during night; has some griping pains, but no tenderness on pressure over abdomen; pulse 102: tongue looks well; infusion of hops discontinued; diet restricted to chicken and light vegetable food.

10th. Diarrhœa continues; has had four or five small, light colored and thin passages, containing some mucus, streaked with blood, during the night, accompanied by griping pains. Ordered calomel grs. 3, opium gr. ½, every three hours; gum water to be used freely; diet, boiled milk and rice.

11th. Took three of the pills ordered yesterday; had no passage after taking the first pill, until daybreak this morning, when the diarrhœa returned; had five passages by 8 o'clock; pulse 120; countenance anxious; temples sunken; tongue moist and clean; thirst considerable; skin cool, and tendency to perspiration; griping pains about lower portion of abdomen; no tenderness on pressure. Ordered to continue treatment prescribed yesterday.

12th. Has had four dark thin evacuations by 8 o'clock this morning; countenance looks better; not so much relaxation of skin; pulse 120; ordered sesquinitrate of iron, twenty drops three times a day, and infusion of serpentaria, half a wine-glass full every three hours. 10 o'clock P. M.; passages still frequent; color lighter; *tenderness* over right lumbar, and upper portion of right iliac regions; respiration somewhat laborious.

13th. Evacuations still continue, character same as yesterday; pulse 120 and more feeble; countenance indicative of exhaustion; temples very much sunken; emaciation considerable; wound for the last two days has discharged less freely; edges not so florid. Ordered milk toddy, a table spoonful every two hours; serpentaria and carbonate of iron continued. 2 o'clock P. M. diarrhœa continuing, ordered acetate of lead, grs. ij., opium, gr. ¼ every two hours; arrow root boiled in milk for diet. 10 o'clock P. M.—has had but one evacuation since 2 o'clock; feels more comfortable and less feeble, and has eaten a bowl of arrow root.

14th. Had four evacuations during the night; wound looks more unfavorable, the purulent discharge has almost ceased, and is replaced by a small quantity of dark, thin and offensive fluid, having very much the appearance of the alvine discharges. Treatment of yesterday continued. 10 o'clock P. M.: has had seven or eight passages; pulse more feeble and very rapid; profuse perspiration.

15th. Has had two evacuations during the night, which are rather more consistent, and have a singular *slate color;* countenance rather better; wound discharging as yesterday; the interior of the

sac looks dark, and is offensive; the upper and lower portions of the wound have healed, leaving an opening in the middle about two and a half inches in length, communicating with the interior of the sac. Directed that the sac should be syringed out with a solution of chlorinated soda, and the wound dressed with a fermenting poultice; patient to take beef-tea and milk toddy, a table spoonful of each every alternate hour; carbonate of iron as before, and acetate of lead and opium *pro re nata*. 10 o'clock P. M., has had nine small evacuations similar in color to the last, but without pain; has taken 14 grs. acetate of lead, and $1\frac{3}{4}$ grs. of opium since morning.

16th. Diarrhœa continues; wound presents same appearance as yesterday. Ordered calomel grs. iij., camphor grs. ij., opium grs. $\frac{1}{4}$, every three hours; injections of laudanum and starch if diarrhœa is not controlled; stimulus and nutriment as before. 10 o'clock P. M.: has taken four of the pills; has not had the injection; passages not so frequent as yesterday; the last one about the consistence of thick gruel; dark slate color. Pulse more feeble and rapid; skin cool and covered with perspiration; tongue becoming dry, and articulation indistinct. Ordered to double the quantity of stimulus.

17th. Pulse rapid, very feeble and thready; skin more relaxed and cooler; tympanitis has appeared for the first time; all remedies discontinued, except the milk toddy, two table spoonsful of which, to be given every half hour. During the day, the tympanitis increased very rapidly. She gradually sunk and expired about fifteen minutes past 12 o'clock at night.

Post mortem, made ten hours after death. Body a good deal emaciated; abdomen very tympanitic. Upon making a section through the linea alba from the sternum down to the fœtal sac, the cavity of the peritoneum was exposed, and, with the slight exceptions presently to be mentioned, was found *free from disease*; there was no effusion either of fluid or of gas in this cavity, while the intestines were greatly distended with the latter.

The viscera occupying the six upper regions of the abdomen were all healthy, and for the most part were found in their usual positions. The viscera occupying the hypogastric and iliac regions, were displaced upwards and backwards by the pressure of the fœtal sac, which lay below and before them, occupying the

greater portion of the hypogastric, and a part of the umbilical and the two iliac regions. The small intestines were simply pushed upwards, and were healthy; the cœcum and ascending colon were pushed slightly upwards and backwards; the transverse colon occupied its usual position; the descending colon did not reach its usual inferior limit, but rested upon the left upper portion of the sac, along the whole superior surface of which the sigmoid flexure was extended from left to right, and to which it was firmly adherent. On reaching the right side of the sac, the colon gradually passed behind it, and making its way downwards and to the left, terminated as usual in the rectum. On laying open the lower part of the colon and the rectum, the former was found considerably thickened in consequence of the effusion of lymph, which had caused its adhesion to the sac, the mucous membrane was softened, and, in the rectum, very much congested; a few points of ulceration and some patches of lymph were observed, but there was no communication between the interior of the intestine and the sac.

The sac itself was perfect, presenting no communication with either the abdominal or the pelvic cavity. Its whole internal surface was black and soft, and emitted a most offensive, gangrenous odor. It had contracted very much since the operation, except at its inferior portion, which had probably been distended by the secretions continually gravitating to that point. Its anterior wall was intimately adherent to the anterior parietes of the abdomen; its superior wall supported the sigmoid flexure; its posterior wall was in contact with the rectum.

The uterus and its appendages were found compressed between the lower posterior portion of the bladder and the anterior and inferior wall of the sac. The uterus itself was perfectly normal in form, size and structure, with the exception of three small fibrous tumors found in the substance of its walls; two in the anterior, one in the posterior portion. A small quantity of gelatinous matter was seen protruding from the os tincæ, and extending up the cavity of the neck of the uterus. It presented no indication of previous impregnation. The right ovary was normal, though rather smaller than usual; the right Fallopian tube occupied its usual situation; the fimbriated character of its outer extremity could not be distinguished, owing to effusion around it; its canal was pervious at its uterine extremity for about one half of its length, but was com-

pletely impervious along its ovarian extremity. On the left side the Fallopian tube was rendered completely impervious, and the left ovary entirely concealed by the dense effusion of lymph which occupied the whole of the broad ligament of that side.

The mucous membrane of the bladder was congested around the internal orifice of the urethra.

The folds of the peritoneum passing between the uterus and the rectum, were pushed on each side by the fœtal tumor, and presented themselves in the form of large cysts, one on each side, containing eight or ten ounces of yellow serum, mixed with portions of lymph.

Thoracic viscera healthy, with the exception of old plueral adhesions on the right side. The lungs were very much blanched. The heart presented slight deposits of fat on its surface; otherwise normal.

Remarks. This adds another to the numerous cases of *abdominal pregnancy* already reported by Diemerbroeck, Esquirol, Moreau, Velpeau and others, and affords another proof, were any now wanting, that impregnation of the ovum and its full development may take place entirely independent of the uterus and the Fallopian tubes. The cause of the escape of the impregnated ovum in this case into the abdominal cavity is probably inexplicable. It is true that the post-mortem examination revealed a condition of things, which, had it existed at the time of impregnation would readily account for it; I mean the occlusion of the Fallopian tubes; but we have every reason to believe that this was the result of inflammation set up *in consequence* of the escape of the ovum into the abdomen, and therefore not concerned in producing that result.

A portion of the history of this case is important. The patient menstruated for the last time about the first of December. Adopting the ovular theory of menstruation, she was in all probability impregnated about the 6th or 7th of December. On the 18th she was seized with symptoms, which the result shows were caused by inflammation of the lower portion of the peritoneum, which, we may fairly conclude, was the result of the attachment of the vivified ovum to the surface of that membrane. The period then from the impregnation to the attachment of the ovum to the inside of the peritoneum was from the 7th to the 18th of December, an interval of 11 days. I am not aware that any case hitherto reported establishes

this fact. This case also contradicts the statement of Cazeau, (*Cazeau's Midwifery*, 2d part, p. 144,) that in cases of *primary abdominal pregnancy, no adventitious sac* is thrown around the ovum, who explains this supposed fact by stating in the language of M. Deseimeris, " qu' un corpuscle aussi peu volumineux, aussi simple, aussi fragile, ne peut provoquer qu' une excitation très légère sur lequel il s'arrête, et que le champ de cette excitation ne peut dépasser les limites du contact du petit corps étranger." That the advent of " this little foreign body" into the cavity of the abdomen was sufficient to cause very violent inflammation was proved by the attack which the patient had on the 18th of December, and that this resulted in the formation of a distinct and complete sac was proved by the result of the operation and of the post mortem examination.

Another interesting point in the history of this case is the unusual length of time that the fœtus must have lived. Velpeau (Dictionnaire de Médecine, vol. 14, Art. Grossesse Extra-Uterine,) says, "that extra-uterine pregnancy, usually terminates before the fifth month by the death of the fœtus or by the rupture of the cyst ;" and again, "It is rare that the fœtus continues to live beyond the 3d or 4th month." In this case the development was fully as great as at ordinary term, and the weight of the fœtus was nearly two pounds greater than the average weight of a full grown fœtus. May not indeed the fœtus have continued to be nourished and to grow, subsequently to the termination of the ninth month? I can conceive of no reason why it should not, unless it be that the compression to which it was subjected by the contraction which took place at the close of the ninth month was sufficient to cut off its circulation, and thus to produce its death; and this we can scarcely suppose, as these contractions were exerted upon a sac filled with fluid, and were moreover so feeble as not to produce a separation of any portion of the placenta. The cause of death in these cases previous to the rupture of the sac is a most interesting subject, and one upon which the profession has but little information. In opposition to the views of Velpeau, the statistics given by Dr. Campbell in his essay on this subject, would show that it is not uncommon for the fœtus to live during the full term of utero-gestation. "In ninety-eight cases," he says, "in which we can decide, or nearly so, on the period of pregnancy, the fœtus in

seventy-nine patients died at the close of nine months, or soon thereafter."

The patient stated that she distinctly felt *what she conceived to be the movements of the child*, up to within a short time before the operation, not longer, she was sure, than six weeks. Now from what has been already stated with regard to the condition of the fœtus and the placenta, it is highly improbable that the child was not dead some months before that period. If so, then these movements must have been produced otherwise than by the child, chiefly no doubt by the abdominal parietes; partly, it is possible by the sac itself. This fact sustains, as far it goes, the ingenious views, lately promulgated on this subject, by Dr. Tyler Smith, and goes far to discredit, the value of these movements as diagnostic signs of the life of the child.

I conclude this paper with one other remark. Under the circumstances, ought the operation to have been performed, or would it have been better to have left the case entirely to the management of nature? When we look at the result of the case, and find ourselves forced to the melancholy conclusion that, through our agency, the life of this poor woman has been certainly shortened, we naturally shrink from the immense responsibility which the discharge of our professional duty, as we have conceived it, has devolved upon us. In deciding, however, upon the propriety of a serious operation, the only questions which the surgeon has to consider are, whether, 1st, the operation is necessary to the well being of the patient; and 2d, whether the patient is willing to encounter the attendant risk for the chance of ultimate recovery. In this case the patient was perfectly willing to have the operation done, after being fully apprised of its danger. That the operation was necessary for the well-being of the patient, I infer from the history of a vast majority of those cases which have been suffered to run their course without interference—ulceration, discharge of a portion of the contents of the sac, and death from irritative fever, briefly describing them. That such would have been the result in this case, and that within a short period, I infer from the decomposition of the fœtus and from the adhesions between the colon and the sac which had taken place. The only hope therefore of permanently relieving the patient was by the operation, and the period selected for it was the most favorable which

had occurred since her impregnation. All danger from hemorrhage was avoided by the impervious condition of the placental blood-vessels--the sac was still perfect, and could therefore be incised without any danger of injuring the proper cavity of the peritoneum, and the general health of the patient, recovered from the previous attacks of peritoneal inflammation, had not yet begun to suffer from the effects of the decomposition of the fœtus. Under the circumstances, I conceive that the operation was not only justifiable, but was demanded as promising a very fair chance of ultimate recovery, to one who, without it, was doomed to a certain and miserable death. By reference to the history of the case, it will be seen that up to the 9th of June, *sixteen days* after the operation, the patient continued to do well. At this period, a marked change took place in the weather, producing a decided tendency to affections of the alimentary canal throughout our city. Is it not fair to conclude that this cause, acting upon an individual predisposed to such an affection by the immediate contiguity of a large suppurating sac, was mainly instrumental in producing the fatal result? In this connection Velpeau (*loc. cit.*) says—"It is true that, practiced in desperate cases, as it" (gastrotomy) "has hitherto been, it has not always prevented death. I think, however, with Desormeaux, that if had recourse to early, when the formidable assemblage of inflammatory symptoms, has not yet been developed, before peritonitis itself constitutes a fatal disease, it will save a great number of women." Again, "with the operation, death is but too probable; without it, it is nearly certain." And Colombat (Diseases of Females, p. 583) says, "we believe that the operation ought to be performed even after the rupture of the cyst, and that in general we ought not to wait until the symptoms of peritonitis shall have developed themselves, because in that case we are almost sure to see the mother and child perish, when, by operating earlier, we might, *perhaps*, *have saved both.*"

Note.—According to the statistics given by Dr. Campbell in his essay above referred to, the operation of extraction in these cases has been remarkably successful. He tells us, "that of thirty cases in which gastrotomy was performed, *twenty-eight* patients recovered. Such success, greater than that which attends ordinary amputations of the extremities, would afford a strong indication for the operation."

Strychnia in Intermittent Fever. By O. H. Edwards, M. D. of Clinton, Summit County, Ohio.

To the Editor of the Medical Examiner:

Dear Sir:—I noticed in your last number of the Medical Examiner, an article on the use of Strychnia in Intermittent Fever, by S. E. McKinly, M. D. of Williamsport, Tenn., wherein he says, "After having tested the various remedies used" in such cases, "none have proved so potent as Strychnos Nux Vomica;" thus assuming it to be of more value than Quinine, for which he offers it as a substitute. As my experience in the use of that article, which has been considerable both in intermittent fever, and other forms of disease, warrants no such conclusions, I offer you the history of a single case wherein I used it for a month without interruption.

Matthias Pool, aged 45 years; occupation farmer; has been subject to occasional attacks of circumorbital neuralgia for ten or twelve years. In the attacks which he had suffered for the last two years, I had been in the habit of bleeding him, and following it with mercurial cathartic and quinine, which always relieved him. As the attacks were becoming more frequent, I concluded to try the virtues of strychnia, in the next. Accordingly in the Spring of 1849, as he applied to me in an attack he was then laboring under, I bled him and gave him a mercurial carthartic, and put him on Tr. Strychnia, 40 minims* three times a day, to be gradually increased until the specific effects of the medicine should be experienced.

In consequence of his increasing the dose slowly, it was not until after he had used it four weeks, that he experienced the effects rising from the internal administration of full doses of that article. After it had occasioned nervous twitchings and involuntary muscular contractions, the dose was continued without being increased for three days—when having in a measure recovered from his neuralgia, it was thought best to interrupt its effects, and the strychnia was discontinued for a few days.

Upon the following day he had a regular shake of the ague—which was treated with quinine during the two subsequent inter-

*We presume Tr. Nucis Vomicæ is meant here, there being no officinal Tr. Strychniæ.—Ed.

missions, with the effect of removing the disease. I mention this case because of the notoriety that strychnia has of late obtained as a curative agent in the treatment of intermittent fever. Mr. Pool had not had intermittent fever for fifteen years preceding the attack to which I have referred, so that it was no case of relapse.

I had been using strychnia in a number of cases of intermittent fever previous to that time, both by itself and in conjunction with quinine, but never had been able to discover any virtues in it, and in the treatment of that disease, and after witnessing its effects in this particulur instance, I abandoned the hope of finding in it a subsitute for quinine.

Cesarean Operation. By JOHN TRAVIS, M. D., of Mansfield, Tennessee.

The Cesarian Operation is a rare one, and, when performed, it has generally proved unsuccessful, more so in Europe than in America.

In the year 1841, I was called to a lady aged 28 years, who was in labor with her third child, which could not be delivered in the ordinary way on account of malformation of the fœtus. I performed the operation in the usual manner, and the mother and child are both living.

The mode of operation is so well described by authors, and so generally understood by physicians, that a description here is deemed unnecessary.

The case is briefly reported merely to show that it was successful.

We have inserted the above communication, more for the sake of cautioning the younger members of the profession against the dangerous doctrine it inculcates, than for any merit it possesses in iteslf.

The author has stated that he performed what is confessedly one of the most dangerous operations in surgery, upon a woman having a well formed pelvis, (as witnessed by her two previous labors,) merely on account of an unnamed malformation of the fœtus, and one too that did not compromise its life.

We aver, and in this we are supported by the highest authorities, that no man has a right to perform this operation under any cir-

cumstances, unless it be clearly established that delivery per *vias naturales* is more dangerous to the mother than the abdominal section.

Cazeaux states "that the operation may be performed on the living female, whenever the natural passages through which the child has to pass are too narrow, or so obstructed, that a delivery by symphysiotomy, or the application of the forceps is, absolutely impossible; and when the mutilation of the child itself, would not permit its extraction without exposing the mother to the greatest dangers."

Dr. Meigs says. "I should be glad, in the most emphatic manner, to enter my protest upon the Records of Obstetrics, against the Cesarean operation being performed with any other view than those relative to the conservation of the mother, with the salvo always, that to save the child is great additional good fortune. I believe that he who performs the Cesarean section upon views relative chiefly to the conservation of the fœtus, flies in the face of the soundest doctrine; and I cannot understand how the conscience of such an operator should ever be appeased under the pungent reflections that must follow a death not rendered inevitable by the exigencies of the patient."

Dr. Ramsbotham, in speaking on this subject, declares that "in the British Isles, out of nearly thirty operations, we only have three instances of recovery on record." And further on: "The fact is not to be concealed, that in different parts of Europe, and especially in Catholic countries, has the operation many times been had recourse to, under circumstances in which no British practitioner would have considered himself warranted in proposing it; where indeed there has existed sufficient available space in the pelvis to admit of the extraction of the fœtus *per vias naturales.*" And in a note he says: "It would be unfair to adduce in confirmation those cases in the latter half of the sixteenth century, the second, third, fifth and sixth of Rousset, which came under his own observation, and the ninth of Caspar Bauhine all which women brought forth live children, *per vaginam* subsequently, even if they are correctly reported; because they belong to the age of *barbarous surgery.*" And still further on he says: "In Britian we never substitute it for craniotomy by choice, but only have recourse to it when no other mode of delivery is practicable." p. 263.

Velpeau says, p. 506—"It may be stated, therefore, that up to the present day, the Cesarean operation has proved fatal in at least one out of five cases, and that Tennon was mistaken in asserting that since the time of Bauhine, it has been performed at the Hotel Dieu on seventy women, who recovered. By the report of J. Burns and S. Cooper, it appears that not a single well attested case of its successful performance has occurred in Great Britian, al-

though the number of operations amount to fifteen or twenty. I think these details will suffice to exhibit the operation to young practitioners in all its importance, and to prevent them from resorting to it in any case, save when the necessity is absolute."

Gooch declares that "the operation is performed only when the deformity of the pelvis is so great, that even after perforating the head and removing the bones of the cranium there is not sufficient space for the extraction of what remains of the child." p. 214.

These authorities, hastily collected, are in our opinion sufficient to establish the danger of the operation, and to dissuade any one from undertaking it, except under the circumstances pointed out. But putting out of the question, the danger of the mother, it should be remembered that the safety of the child is also compromised, for the most stubborn advocates of the Cesarean section are forced to acknowledge that they are not always fortunate enough to extract a living child, even when the operation is performed at the time of their own selection. And even should the child survive, can it fill the void which is almost certain to be created by the death of its parent?

If we have censured the author of the above report unjustly, we can only plead in justification, the meagre details with which we are furnished; but as it now stands, we are compelled, both on the ground of humanity and scientific surgery, to enter our protest against the operation as unwarrantable, and our caution lest others should "go and do likewise."—Ed. Examiner.]

Friendly hints to a Reviewer.—Something more on moist hot air.

By Samuel Jackson, M. D., (formerly of Northumberland.)

To the Editor of the Medical Examiner.

You published my hints on wetting the streets, in the June No. of the Examiner; you have seen the review of it by Th. Bell, M. D., in the July No. of the Western Journal of Med. and Surg., of which he is a co-editor. He has in spirit if not in sentiment arraigned me as unphilosophical, confused in mind,* and as justly suspected of "murmuring at Providence." I am very unwilling to answer the reviewer, and I therefore send you only a rambling commentary, for it has not been consistent with either my leisure or taste to spend much time on the subject. I am sorry that I did not see the review till it was handed me by our friend Dr. Isaac

* "It seems to us that Dr. Jackson set about his investigations with a confused set of ideas."

Parrish, the 26th ult., when your last No. wherein this reply ought to have appeared, had gone through the press.

As I do not feel that I can safely spare the least portion of my little reputation for the character of *Religious*, among a people whom M. de Tocqueville considers as more *religiously* persecuting than any nation of Europe, I shall first defend myself in this vulnerable quarter. Some physicians have had the fame of making religion a rail-road to the paradise of a profitable practice; but, alas for me, poor sinner, I am like Swift, "a hypocrite reversed," for I am openly running backward on the same track.

I have wickedly said—"The washing of the pavements is a very great evil whether in winter or in summer, independently of the dampness it adds to the atmosphere. If done in the morning, it annoys passangers by wetting their feet, and not unfrequently the pavements become thereby covered with ice and dangerous to all pedestrians: if done in the evening as it often is, it is sure to have this effect in freezing weather; and in the milder, they remain wet till the next day noon. Now it is a fact, that there are many sick people who cannot take fresh air except by walking, and to them, and indeed to all delicate people, the damp pavements present a very formidable obstacle. This is not a hypothesis of mine, but a stubborn fact from the lips and hearts of many sickly people."

Now, says the Reviewer, "this sounds to us very much like what some people call 'murmuring at Providence.' He who orders all things, has ordained rains for a Philadelphia winter, and without any regard to 'sick people who cannot take fresh air, except by walking,' or to all delicate people, or to Dr. Jackson's opinion that it is a great evil, Providence has ordained freezing weather for Philadelphia, and we cannot see how Dr. Jackson's strong objections to rain and frozen pavements can alter the movements of Heaven. His remarks apply as forcibly against winter rains as against the use of Schuylkill water. According to Dr. Jackson's hypothesis it is wrong to send rain on a winter's evening, because if the weather is cold the pavements will freeze, and if not cold enough for that, 'they will remain wet until next day noon.' Dr. Jackson evidently thinks there should be no rain in freezing weather; and that all winter rains should fall in the morning, and Providence should send out a drying sun, to dry up the pavements sooner than next day at noon. Really we cannot see how Dr. Jackson is to be accommodated. Even if the city authorities of Philadelphia could be persuaded to bring water 'from the Lehigh, or the Delaware far above the Falls,' the evil would not be removed, for Providence would prove to be rather an untractable subject for reform on the puny reasonings of an erring mortal."

Observe, kind reader, he says—"this sounds to us very much

like what some people call—murmuring at Providence:" not merely *much* but *very* much. I will not say that his replication sounds *very much* as though written by St. Dominic's Chief Inquisitor. Such a bill of indictment, seems to require a formal recantation and open repentance, if it be founded in truth. I have placed the crime and the bill side by side as he has quoted and written them, in addition to which a few words will suffice. God has created and governed the world in benevolence and wisdom; he sends rain, frost, lightning, and storms so as to effect the greatest possible general good; yet no man was ever accused of murmuring because he turned aside the fiery bolts, or invoked or deprecated rain, as our ministers are ordered to do from the pulpit, *pro re nata.* No one ever heard Mr. Espy called impious because, he would bring rain into a particular region though he would thus withdraw it from lands where Providence had sent his clouds. Have men not made changes in the earth without this murmuring—levelled mountains, filled up marshes, dug canals, turned aside rivers; and have not the people of Louisville built a huge bridge which the law will soon compel them to unbuild? (This however is not so much a murmuring as an open rebellion, for the New Testament enjoins all men to obey the laws.) Heaven has given the Reviewer hair and nails and covered his body with a tough hide—why does he not in his anti-murmuring zeal, leave these all to nature and go about like Nebuchadnezzar, with a naked body, "birds claws, and eagles feathers?"

Heaven has sent fevers into many parts of the earth—would any court be accused of this "murmuring" if they should forbid the erection of mill dams or the turning aside of rivers by which the country would be filled with vapor, malaria thereby rendered more active, and fevers multiplied? Has not Providence sent us cases of small pox the last 50 years, and are we therefore justified in propagating the disease, or would not the law interfere? Impious law, which would thus prevent what is so clearly appointed by the example of heaven itself!! Men are often observing to each other that the pavements are too wet or too icy for walking with safety and comfort, this they do without this "murmuring"—would they not be justifiable in preventing their busy-body neighbors from making them wet or icy at times when Heaven had left them dry and safe?

But the Reviewer *constructs* another accusation—"according to Dr. J.'s hypothesis, it is wrong to send rain on a winter's evening, because if the weather is cold, the pavements will freeze," &c. If *constructive* treason against the state is not allowable in secular courts, I shall hope it cannot be entertained even in the ecclesiastical court of public opinion, so that we shall come off unscathed and be able to whistle down the Reviewer with the good old tune,

Où courrez-vous donc Monsieur l' abbé?
Vous allez vous casser le nez.
O Doctor, Doctor, where do you run
In haste to break your nosey?

Let the Reviewer remember the *Tale of a Tub* and profit by Jack's intemperate zeal for religion and his broken nose.

The Reviewer says:—

"That the sprinkling of water, on streets paved with stone cannot have a baleful influence is manifest from a great variety of facts. Before the streets of Louisville were paved, the rains of summer caused a great mortality. This was not on account of the mere humidity of the atmosphere, for the rains that fall in summer now, make the air as humid as that of 1822, but without any evil effect. All parts of the city of Louisville are equally sprinkled by rains, but all parts are not alike unhealthy. A considerable portion of the city retains its health, amidst the heats of summer, the blasts of autumn, the sleets of winter, and the rains of spring, and it is, therefore, evident, that we must look for something else besides the mere dryness or humidity of the atmosphere, as a cause of disease. The drenching rains of summer that fell for a month, in Lexington, Kentucky, in 1833, and caused a frightful cholera epidemic, did not affect all parts of that city alike. The ravages of the epidemic radiated from an unpaved portion of the city, but large squares in Lexington were exempt from the epidemic disease. But the exempted, equally with the afflicted portions had a humid atmosphere. That portion of the city of Cincinnati that is most constantly sprinkled with water from the hydrants is very far from being the most sickly part of the city. And that portion of Louisville most constantly sprinkled by water-carts is precisely the most salubrious part."

I cannot understand this passage unless the Reviewer means by *disease* the koinomiasmatic fevers, for he says,—"a considerable part of the city retains its health." This must be a cant phrase for an exemption from the fevers of the Western states, for surely there must have been sickness of various kinds in every part of the city. Let us proceed then on this assumption. Before the streets of Louisville were paved, they were no doubt covered for

a long time after heavy rains, by mudholes, as thick as they are found in the unpaved roads in the vicinity of every city; now to say that no more vapour arises from such streets than from those that are well paved and therefore quickly dried, is a glaring absurdity. This is the ground which, *in the confined air of a city*, affords the most vapor. The earth is heated, the water is spread abroad in shallows and mixed with earth over hundreds of acres—what more is wanting to produce steam ?

But says the Reviewer, " we must look for something else besides the mere dryness or humidity of the atmosphere as a cause of disease." Undoubtedly you must if you have fevers, but with this unknown something and with fevers, I told the Reviewer in my preface that my reasoning had nothing to do, only so far as they were rendered worse by an atmosphere too moist. But mark " the confused ideas" of which he blames me : he has just said " we must look for something besides mere dryness and humidity as a cause of disease" and yet the very next words are these— " the drenching rains that fell for a month in Lexington in 1833, caused a frightful cholera epidemic." Ἐυρηκαμεν ἐυρηκαμεν συγχαιρωμεν we have found him, we have found him, let us rejoice together, said the priests of Osiris—let physicians congratulate with each other that the cause of cholera has been at last discovered; it is nothing but a " drenching rain."

He says the disease " radiated from an unpaved portion of the city :" it no doubt began there first, for there were the mudholes and the consequent vapors that gave activity to the mysterious poison, and had already broken down the strength, the *vivida vis*, of the people, thus rendering them more susceptble. Oh, no, no, says the Reviever, " the exempted equally with the afflicted portions, had a humid atmosphere." Did the Reviewer verify this incredible assertion by the hygrometer ? Is it consistent with experience particularly in London, that the muddy parts of a city are as free from vapor as the paved and dry ? But the portions of Louisville and Cincinnati that are sprinkled, are not the most unhealthy, says the Reviewer. Very likely, because in these portions live no doubt the very people who are least exposed to sickness, whose streets are paved and dry with the exception of this sprinkling—and mark, I no where asserted that sprinkling produced disease ; I only said that it would, if made general, contribute,

with the washing of pavements, side-yards, back-yards, and alleys, to the hygrometric state of the atmosphere; and I left it to the Society to which it was addressed, to argue, whether it could be in sufficient quantities to injure the public health.

As to its producing any specific disease, as malarious fever or cholera, this idea never entered my head. I have to confess however that I used one unguarded expression or word—" this impure water is showered over the streets where mingling with the *miasma-gennetic* materials there spread abroad, a poisonous exhalation is diffused thro' the air." But here the intelligent reader will see clearly that by the word *miasma* I did not mean the malaria of fevers; I took the word in its primitive and general sense from μιαινω to pollute, defile &c. So we may say the air within and around the cemetery *Des Innocens* was polluted, breaking down the health of the vicinage, producing debility, incurable headache, and nervous tremors, but then there was no specific fever generated thereby. Malarious fevers did not come into my argument, for they are scarcely thought of in the interior of Philadelphia.

When I relate from Park, Lind, and others, that different parts of the African torrid zone are healthy during the dry season, I am not crazy enough to suppose there was no miasma in the air; on the contrary, I fully believe there was; but it was not very active till the rains came and the dew point rose to 80 or 90, thus preventing a salutary perspiration, shutting out oxygen, and depressing the whole vitality. When I spoke of the tremendous rains of Africa as followed by sickness, I did not mean that water from clouds was the direct cause thereof, but that it merely afforded the material of vapor. It rains and shines in quick succession and the whole country is therefore a vapor bath.

Some people have no conception of moisture which they cannot see and feel and shake from their clothes; this seems to be the Reviewer's fate thro' all that he has written; but my reasoning supposes water dissolved in the air and not to be seen, felt or ascertained except by the hygrometer or by its depressing influence on the body and mind. I spoke of heavy rains, but merely as affording the hypostasis of vapor. It is this and not fogs that Dr. Willis, Mr. Hopkins, and our own illustrious Dr. John Bell have supposed was the great remote cause of malarious fevers. But the Reviewer begins his attack upon me with four separate fogs—the

East, the West, the South, and a certain other fog that dear good Dr. Wistar used to speak of; and he maintains that they are not morbific. He must mean that they do not cause malarious fevers, for he can think of nothing else. Thus far he is certainly right; but if he means that they are never the remote or the exciting causes of inflammatory disease, he is as certainly wrong. See professor Bell's paper quoted in my discourse.

But why name fogs, a word that is not to be found in my whole paper? When vapor is reduced to fog, it is like rain, comparatively innocuous in summer. One might suppose that the Reviewer had lived in Bœotia or Abdera where fogs hebetate the mind; but as he does not appear to be deficient in other compositions, and moreover, since by turning to his title page you find him most honorably allied, you may rather infer that his dullness was temporary and that he wrote this review during the prevalence of a south and vaporous wind, the "*plumbeus Auster.*" You would not believe that, unless under some sinister influence, a man of his gravity would practise the art of punning which he well knows is the lowest species of wit and never to be used in a grave subject. He calls the paper he criticises *hydrophobous* and like a child, "pleased with a rattle,tickled with a straw," he repeats the witty epithet, I shall not stop to inquire how many times. How he would despise me were I to call his writing *tintinnabulous*, in allusion to his name!

Had he not "*set about his review with a confused set of ideas*" in a vaporous air, he would have clearly seen that I did not deprecate an abundance of water in our streets, but the prevalence of invisible vapor, and he would have called my paper—*steam-fearing*. For I said, let the water pour down our gutters in the greatest abundance, as it passes on rapidly in a narrow stream and has not time to evaporate;" and I direct that the scavengers shall sprinkle before they sweep and scrape, because "this lays the dust which is raked into heaps and hauled away before there is time to do mischief." And yet he has the hardihood to say that I recommend a broom "in place of the sprinkling of water," when in truth I urge both broom and sprinkling in the same sentence!

There is one thing, however which I neglected to say—that tho' light showers and mere sprinkling are injurious, heavy washing rains in a paved city must be salutary; and there is another thing which I said unjustly—I called the Schuylkill water *pestiferous*.

This was certainly a word too strong, but surely I did not mean that it contained the seeds of the plague, or any other specific disease, merely that it was fraught with foreign matters inimical to health. I ought not to have used this word, but in the hurry of composition some unguarded expression must often escape. Something too must be conceded to *hyperbole* a figure that pervades the best of writing—St. John says that if all the deeds of the Saviour were recorded, the world would not contain the books.

Let us say a few words about the wonders of Louisville. He says " that before the streets of that city were paved, the rains of summer caused a great mortality. This was not on account of the mere humidity of the atmosphere, for the rains that fall in summer now, make the air as humid as that of 1822, but without any evil effect." Whether the air of that city is as humid *now*, which means of *late years*, as it was in 1822, may be judged of by what the lamented Professor John. P. Harrison says, *Phil. Jour.* vol. viii. p. 8. " In the opening of 1822, we had an almost unprecedented quantity of rain ; and during June, July, August, and September, an unusual succession of heavy and continued showers. The rain though it fell in excessive abundance and in heavy torrents, seemed to have no effect in cooling the atmosphere. There was a coolness and sultriness proving very oppressive during the summer months, which with little or no abatement continued through the night as well as day." And Prof. Yandell says, *Trans. of the Amer. Med. Ass.* vol. ii. p. 612, that Louisville was formerly called " the grave yard of the West" but that now it is esteemed one of the most healthy cities: that it was subject to bilious fevers that rivalled yellow fever in malignity : that the most fatal of these epidemics broke out in 1822 after a hot rainy season: that at this time only one street was paved and there were eight ponds within the limits of the city most of which were dried up in the course of the summer, exposing foul bottoms to the sun.

Now is it possible under all these circumstances of inordinate rains and heats and ponds and unpaved streets covered with mud, that the air was not more humid than at present ? or does the Reviewer mean that the sprinkling machines supply the place of ponds and mud and African rains ?

Let us here step aside to observe that in 1819 and 20, the peo-

ple of Louisville enjoyed the benefits of dryness. The summer and fall of these years, says Dr. Harrison, *Phil. Jour.* vol. viii, p. 7. "were remarkably healthy—they were very dry—but some of the weather was as warm as that of the subsequent years. In each of these years little rain had fallen in the spring and early summer months. The ponds in and near the town were evaporated and quite free of water before the first of July in each year. The river was low during both the summers of the above years and there was deposited on the shores and rocks near the town a considerable quantity of drift wood and other matter left by the subsidence of the river and creek." See here the happy effect of dryness, which prevented the action of the febrifacient materials left in the ponds, on the streets, and on the banks of the river. *The next two years were rainy and sickly.*

It might be inferred from the Reviewer that Louisville has more need of sprinkling than most other cities. He says—"it is impossible that arid streets and an atmosphere loaded with impalpable dust of carbonate of lime, can be salubrious." There is no such dust in Philadelphia for which alone I wrote, and therefore, what doleful effects it might produce, I cannot say; but much other dust is borne by the lungs without serious injury. Colliers and all who work in clouds of coal dust are very healthy; millers are healthy except their peculiar cough; in Egypt the blowing sand is so abundant as to keep almost every one's eyes sore, yet it inflicts no other sensible injury; the caravans on the deserts of Asia and Africa, are not much injured in their health by storms of sand, although these are sometimes so thick as to kill suddenly by shutting out oxygen; the clouds of thick dust that attend the marching of armies day after day are not very serious evils. That dust is a little annoying, is freely conceded; and from the Reviewer's horror and his desire to sprinkle it down, one might infer that he was as restive as other people under the yoke of Providence. I have been told that Cincinnati is paved with a friable carbonate of lime and that the dust is often intolerable; if Louisville is thus paved, let them sprinkle as the choice of two evils.

That some kinds of dust as that of dry-grinders and pearl-workers, is injurious, has been sufficiently proved; but I cannot find that the citizens of Phila. are set to coughing by the inhalation of street dust. Nine-tenths of the time, it is not even perceived. Our citi-

zens in riding abroad for their pleasure or health, pass each other by crowds in Broad Street beyond the pavement where they are covered with dust, preferring this to the damp and confined air of the city, where dust is comparatively very rare. I cannot remember that in walking or driving in the streets of Philadelphia I have been annoyed by dust this summer, yet this is the middle of August and not a mile of the city is sprinkled by the machine. An old man who has been in the constant practice of giving advice in relation to health, will often be obtrusive, hence I cannot help saying to this Louisville Doctor—clean your streets before you sprinkle them. What *in loco cit.* says Dr. Yandell the presiding genius of that city? "It would certainly be difficult to find any where more uncleanly lanes and thoroughfares than Louisville presents. One of the first things that strikes the eye of a stranger is the neglected condition of our streets. He wonders how the city can be healthy with such masses of putrescent matters in its midst." But he adds—"the streets of the city are wide and cross at right angles, which secures the most perfect ventilation and *favors their drying fast after rains.*" This was written only sixteen months ago. The following four short paragraphs contain a surprising number of errors and rash assertions.

"But let us survey some other parts of the earth. One of the healthiest portions of Devonshire, in England, is Torquay. It is a resort for a considerable number of invalids. But the humid state of the atmosphere of Torquay is notorious.

"The south of Italy has long been celebrated for its salubrity, but it is no less famous for its humid air, and Rome, the most humid part of the south of Italy, has the best climate for invalids. Madeira has long been the shrine of Hygeia, to which pilgrims from all parts of the world have resorted, but it, too, has an atmosphere that can scarcely be called dry.

"In the West Indies the hot, dry months are not healthy. The invalid is urged to spend all the time he can upon the water, where the atmosphere is much more humid than that of the land. A ship may be 'dry' but its atmosphere is not.

"An important fact should also be borne in mind, and that is, that there are many diseases which are benefitted by humid air, while there are others injured by it. While, therefore, Dr. Jackson's hydrophobia might benefit one set of invalids, it would be deleterious to another."

The truth is that Devonshire is the south of England, on the channel bordering France, and of course the air is comparatively warm; hence a number of situations therein have been sought for

a winter residence—not because the air was supersalubrious, but because it was warm for an English or Scotchman. It is convenient for those Northern men who cannot leave the island, but did you ever hear of invalids going there from neighboring France or any other foreign land? The Reviewer says "the humid state of Torquay is notorious." Sir James Clarke, the highest authority, says otherwise—hear him.

"Here the invalid has the advantage of a considerable tract of sheltered country, some part of which will afford a protected ride or walk in whatever direction the wind blows. Torquay is superior in this respect to every place in our island. Its position also on the southern declivity of a range of pretty steep hills, composed chiefly of calcareous rocks, renders it *comparatively dry.* Hence while Torquay possesses all the advantages of the climate of this coast, its chief disadvantage, *humidity*, is felt in a less degree than elsewhere."—*Cyclop. of Pract. Med., Art. Climate.*

As to the south of Italy, did any one ever hear of its salubrity? Consumptive, rheumatic, and bronchial patients may go there to spend a winter, but this is all that can be said in its favor. So they go to the West Indies, but no father or mother would go to either place to rear a robust family, and this is the very thing that my steam-fearing relates to. He says that "Rome is the most humid part of the south of Italy." For this he ought to have given some proof. Sir James Clarke says it is dryer than Pisa which is nearly two degrees further north, and yet on the southern coast. In the country south of the Appenines and below the latitude of Rome down to the toe of the boot, you may find many places more humid than Rome. It is at Naples and still further to the south-east, that the moist sirocco blows for weeks, relaxing every fibre and dejecting every mental energy. Whoever would say "the south of Italy has long been celebrated for its salubrity," would do well to read Dr. Jas. Johnson on "Change of Air" and the Rev. Mr. Mathews' Diary.

He says that in the West Indies "the hot dry months are not healthy." Let him say whether the hot *wet* months are healthy. Neither dry nor wet months are healthy in this region unless you reside in the mountains. If the dry hot months should at any time prove the least healthy, it is because they indirectly favor the generation of malaria and this I mentioned in my preface; but

look into Hillary on "Change of Air," you will find that July and August were unhealthy in proportion to the quantity of rain; and Mosely begins his summary of advice to Europeans arriving in the West Indies thus—"Living in a house with lofty and spacious rooms in a *dry* situation, &c." As to people seeking their safety on the water, this is merely the less of two evils, for surely no one is crazy enough to pretend that a ship in the torrid zone is a healthy situation. The inmates may not contract the specific fever of the neighboring land, they may not die, but they will be broken down in their vigor and elasticity.

He says that Madeira is the shrine of Hygeia and that "it can scarcely be called dry." Suppose I too were to guess and rashly say, it can scarcely be called humid. The pure air from the sea blows over it and carries away its impurities; and during the hottest weather, the sun being in his extreme northern declination, the island is under the purifying influence of the trade winds. The island rises rapidly from the coast by a succession of lofty hills, the soil is desiccative and the streams very rapid. For six and often for eight months, the silk worm might be fed on the trees, for during that period it seldom rains except in the mountains.—*See Rees' Cyclop.*

Dr. Gourlay, who had resided there eighteen years when he wrote, says that "a drop of dew seldom falls except in the higher parts:" and Dr. Joseph Adams then residing on the island, (*Med. and Phys. Jour. for* 1801,) speaking of the charming temperature says, "the dryness of our atmosphere is not less remarkable." Then he speaks of the absence of fogs and the rapidity of rivers. Dr. Wilde, *p.* 89, says the "dry and balmy air which produces this never-ending spring, &c." At *p.* 113 he says, "with so little rain and dew, it may naturally be asked, how vegetation can be so luxuriant"—he means in and near Funchal, where the foreign invalids reside. The above will help to show that the Reviewer's *salutary* fogs are not to be expected here and that the island can scarcely be called humid during six or eight months. But he says it is the "shrine of Hygeia." Dr. Gourlay thinks otherwise and says *Part III.*, it is equally the seat of disease as other countries, and the forms of these are neither few in number nor mild in their nature."

But with respect to all these moist places mentioned trium-

phantly by the Reviewer—Torquay, Southern Italy, West Indies, Madeira—not one of them is rendered useful to invalids by its humidity, or recommended to the sick on account of this property; there is not one of them to which a physician in his right mind would resort for the purpose of rearing a family in health, longevity, and vigor. Invalids and aged people run there in winter to escape frost and chimoniphorous mountain winds, just as they would cover their belly with pitch to prevent cholera. These places, they think, have the desirable uniformity of temperature, and their humidity *during the winter*, is not as injurious to them as the evils they fly from. Thus some physicians in England a few years ago, sent patients to pass the cold weather in cow-houses, in order to breathe day and night the milder air from their cattles' lungs and bowels, and I believe it is practised in France to this day; but did the same doctors advise the whole world sick and well to do the same?

To his "important fact" that many diseases are benefitted by humid air, I have only to reply, there is not one in the earth that could be relieved by air more humid than ours of Philadelphia generally is in the summer months. Here too, in allusion no doubt to my story of Capt. Murray's dry ships, he says "a ship may be dry but its atmosphere is not." O, wonderful! But may not the internal atmosphere of a ship be rendered drier by such means as Capt. Murray used?

The Reviewer says "it seems to us that Dr. J. set about his investigation with a confused set of ideas and that the confusion increased greatly towards the close of his paper." This assertion he no where attempts to prove unless at p. 11, where he writes as follows—

> "We have remarked that Dr. Jackson's confusion increases towards the conclusion of his essay. He finds it difficult to meet the objection urged against his views, in the appeal to the genial influence of showers of rain. He solves the difficulty by declaring that there is no kind of comparison between 'pure water from the higher regions, which in its descent washes and purifies the air,' and 'the impure and pestiferous water of the Schuylkill.' This then is a surrender of the whole question. If Dr. Jackson had started out with the proposition that sprinkling streets with impure and pestiferous water is injurious to health, he would have found no one to controvert his position. Truth forces him to admit that streets may be sprinkled with pure water, without any injurious effect.

"But there is another important admission in Dr. Jackson's effort to meet the fact we have mentioned, an admission that is fatal to his entire series of speculations. In announcing that falling rain washes out impurities from the atmosphere, he admits that a dry air may be unwholesome. These impurities spring from the bosom of the earth, and nine-tenths of them are of a character that may be kept from a breathing atmosphere, by sprinkling the streets with pure water. The hydrants and fountains of New York and Boston, are not detrimental to health."

My whole reasoning goes upon the fact, that an inordinate quantity of water *pure or impure* dissolved in the air as it is during a south wind, depresses the vital powers and is therefore more or less injurious to health, independently of its favoring the remote causes of disease. But as I was writing for this city in particular, I spoke of the impurity of our water as an *accumulative* evidence, to use a law phrase, against the sprinkling, precisely as I spoke of miasma-gennetic materials in the streets; I have no where admitted, as he asserts, that streets may be sprinkled with pure water without any injurious effects. No such admission can be inferred from any part of my paper; not from the case of Capt. Murray's ship, Blagden and Fordyce's experiments, Willis's theory, the long extract from Dr. John Bell, nor yet from any thing in the deaths at the battle of Monmouth. I set out at the first with this proposition—"that a great excess of heat is tolerated by the human body without injury, provided there be no excess of moisture," and to this proposition I have steadily adhered. He says "Truth forces him to admit that streets may be sprinkled with pure water without any injurious effects." This is another *constructive* accusation and I disdain to answer it; but the Reviewer might be advised to remember how Peter found what he wanted in his father's will—in syllables and letters.

The Reviewer slyly observes that the hydrants and fountains of New York and Boston are not injurious to health. How could they possibly injure health on my principles? They are not calculated to afford an invisible steam. The water pours up cold to a certain height, then falls into a basin and runs off under ground. It has not time to absorb a vaporising heat; and the little caloric that must be combined, is quickly carried under the earth. Some little vapor must be produced, but not enough to do any evil. The same may be said of the hydrants that wash the gutters.

As to the "important admission which is fatal to *my* entire series of speculations that dry air may be unwholesome and that rain washes out its impurities," it is only necessary to say, that all air, dry or moist, is more or less impure particularly in cities; and I freely admit as I did in my paper that rains do wash and purify it. But I ought to have said *heavy* rains, for light showers that merely lay the dust, as does the sprinkling machine, cannot do this; on the contrary, they never can fail to increase the impurity of the air—they promote putrefaction and exhalation which rises around us and is precipitated within reach of our lungs by the dew, to rise again with the next day's heat and vapor. This too must be the effect of sprinkling the streets to any great extent even with the purest water.

That very great man, Dr. Rush, used to teach us that light showers were always injurious in a sickly season. But the Reviewer says "impurities spring from the bosom of the earth and nine-tenths of them may be kept from a breathing atmosphere by sprinkling the streets with water." I prefer the authority of Dr. Rush. But if this need any support, let us see what some of the wise and learned physicians of Philadelphia have said on the subject. Among many questions proposed by the Councils to these men individually, is found the following:—

"Is it proper to water or sprinkle the streets before cleaning them or at any other times; and what precautions if any would it be desirable to employ while cleaning the streets and gutters?" To this three physicians answered in favor of sprinkling and the following nine against it.

Professor Dunglison says—"The undersigned can have no facts to offer. Believing however as he does that the hygrometric condition of the air is much concerned in the production and extension of disease, he would be disposed to prefer the dry cleaning of the streets to the moist." He recommends the flowing of water through the gutters night and day.

Professor Bache says—"It is proper to water or sprinkle the streets before cleaning them, if they are dry or dusty; but not at other times."

Professor Gibson—"The streets should not be *sprinkled*, but thoroughly cleaned by opening fire plugs and hydrants and washing away with a deluge of water all foul matters. Desiccation follows sprinkling and this is believed to be deleterious."

Dr. J. W. Moore—"I do not think there is any objection to sprinkling the streets for the purpose of cleansing them; but I do think the practice of watering them in hot weather prejudicial."

Professor Meigs—"The use of hose to water the streets at the discretion of citizens and servants, ought to be forbidden, inasmuch as in many of the principal thoroughfares, the dust is constantly kept in a state to favor the rapid decomposition of matters mixed with it, giving rise *not only to unwholesome damp* but disengaging chemical vapours that are injurious to health. If we should be subject to cholera, we should be safer in a dry than in a damp city. Our city is too much watered at seasons in which excessive moisture ought to be avoided. As to cleansing the streets, I advise that they be swept while dry.

Professor Mütter—"As moisture when combined with heat is one of the chief sources of malaria, it must be obvious that to sprinkle a dirty street or alley and allow the surface to dry by degrees, cannot fail to be injurious to health. This however is very different from a thorough washing, and I advise that the hydrants be allowed to flow every day or two. Where no hydrants exist, I believe dry sweeping will be better than sprinkling."

Professor Sam. Jackson—"In dry weather sprinkling or wetting the streets before sweeping is required to lay the dust; but the dust should not be converted into mud which defeats the object of sweeping."

Professor Grant—"I consider the practice of watering the streets during the heat of the day for the purpose of laying the dust &c. as very objectionable. Every such sprinkling promotes decomposition. I suggest that the citizens should not be permitted to sprinkle the streets &c."

Dr. Isaac Hays—"It is proper in very dry weather to sprinkle the streets before sweeping them; but it cannot be conducive to health to keep the streets constantly sloppy."

While I have such men as these on my side and many others who ought to be named, I shall feel as confident as did a great actress of old whom the vulgar exploded and the knights applauded.

> ——nam satis est *equites* mihi plaudere, ut audax
> Contemptis aliis explosa Arbuscula dixit.

We shall not quote the next lines, sincerely believing they are not suitable; for notwithstanding the apparent temper of the Re-

viewer, we believe that its author is a man like Sir Jonas Hanway, "whose vices may well be forgiven for the sake of his virtues." He has shown some cloudiness of mind, the temporary effect no doubt of vapor from the sprinkling machine; and a spice of ill-nature, which may be imputed to a bad state of the bowels, as indigestion and flatus, says Voltaire, in ministers of state, occasion nearly all the wars of Europe. He seems to be a *religiosissimus* and very irritable on the subject of religion; now as a few barrels of oil have been said to smooth down the angry waves, it might be well for him to take some cod liver.

I have now, Mr. Editor, spent too much time on this subject and therefore I bid it a final farewell.

BIBLIOGRAPHICAL NOTICES.

The Principles and Practice of Dental Surgery. By Chapin A. Harris, M. D., D. D. S, Professor of the Principles and Practice of Dental Surgery in the Baltimore College, &c. &c. *Fourth Edition; revised, modified and greatly enlarged, with two hundred illustrations.* Philadelphia. Lindsay & Blakiston: 1850.

We hail with pleasure every advance made in this kindred branch of surgery, and gladly award the meed of praise to him who adds but a mite to the treasury of fast-accumulating lore in this department. Among the most energetic in the good cause of reform is the industrious author of the work before us, whose high appreciation by his brethren is manifested in the rapid sale of three large editions and the appearance of a fourth. The days of empiricism and charlatanism are fast disappearing under the labors of the author and his colleagues, and other colaborers, and scientific attainments are rapidly becoming a sine qua non to him who would hope for even moderate success in his profession. Mere mechanical dexterity is not all that is necessary to make an accomplished dentist. A knowledge of Anatomy, Physiology, Hygiene and General Therapeutics, are even more essential to con-

servative dentistry, the great end and aim of every judicious practitioner.

These general remarks have been drawn forth by the perusal of the volume before us, which although familiar to us, and doubtless to the mass of the profession, from an acquaintance with former editions, still demands that we should speak in flattering terms of the care and erudition displayed in its production. We observe three new chapters on "Filling Teeth" and one on "Mechanical Dentistry," with the addition of forty-five new engravings. In mechanical execution the work cannot be excelled, and we predict for the present edition an equally favorable reception as those of its predecessors.

General Therapeutics and Materia Medica; adapted for a Medical Text Book. By ROBLEY DUNGLISON, M. D., Professor of Institutes of Medicine in Jefferson Medical College, &c. &c. *One hundred and eighty-two illustrations. Fourth edition, revised and improved, in two volumes.* Philadelphia. Lea & Blanchard.

Good wine, it is said, needs no bush. The wide-spread reputation and rapid sale of Dr. Dunglison's works are the best exponents of their acceptableness to the practitioner and student, for the latter of whom they are more especially intended. In announcing a fourth edition, we are informed that the work has been subjected to a thorough revision, both as regards the style and matter. The remedial agents of recent introduction have been incorporated in their appropriate places; the number of illustrations has been greatly increased; and a copious index of diseases and remedies has been appended, which can scarcely fail to add to the value of the work to the therapeutical inquirer. The well known habits of industry of the author are a sufficient guaranty for the faithfulness and completeness with which the work has been executed. We commend it most heartily to both practitioner and student, assured that they will find in it a mine of treasure.

Medical Jurisprudence. By ALFRED TAYLOR, F. R. S., Licentiate of the Royal College of Physicians, Member of the Royal College of Surgeons, Professor of Medical Jurisprudence and Chemistry in Guy's Hospital. *Second American from the Third London edition, with notes and additions by* R. EGLESFELD GRIFFITH, M. D. Philadelphia. Lea & Blanchard.

The editing of the present American edition was among the last, if not the very last, of the labors of the lamented Griffith, the circumstances of whose death, and a short account of whose labors we presented to our readers in a recent number. We regret that the crowded state of our pages forbids our doing more than simply announcing a new edition, in which a large portion of the whole work has been re-written, and eight new chapters added. Much valuable matter has been introduced in the chapters on Wounds, Infanticide, Pregnancy and Abortion, and the whole may now be considered as one of the best expositors of the existing state of the science both abroad and in our own country.

REPORT OF THE TRIAL. THE PEOPLE VS. DR. HORATIO N. LOOMIS, FOR LIBEL.

Tried at the Erie Court of Oyer and Terminer, June, 24, 1850.

In a bibliographical notice of Bennett on the Uterus, in the June No. of the Examiner, we incidentally alluded in terms of commendation to the recent effort of the Professor of Obstetrics in Buffalo Medical College to introduce the method of teaching midwifery by demonstration. It now appears that the information on which that opinion was based, was erroneous, as shown by the evidence brought forward at the late trial for libel, in "the People vs. Loomis;" we must therefore withdraw whatever countenance may have been given by the article mentioned, so far as regards *ocular* demonstration.

We must also protest against the necessity of exposing the female during the operation of turning, as advocated by one of the witnesses at the trial; indeed we cannot see under what circumstances it can be even admissible. It certainly is not the practice nor the doctrine taught where we were educated, that "exposure is a necessary element of the operation."

We have alluded to this pamphlet very briefly, merely to correct the opinion advanced by us under a wrong view of the case. We cannot but regret deeply that the matter was ever brought before the public at all; more especially as regards the statements made by one of the witnesses already referred to, in which we are sure he will find no sympathy from a very large majority of the profession.

THE MEDICAL EXAMINER.

PHILADELPHIA, SEPTEMBER, 1850.

SYDENHAM SOCIETY OF LONDON.

In the pages of the Examiner we have drawn the attention of our readers from time to time to this valuable Association, which for seven years has been pursuing unobtrusively, but beneficially, the even tenor of its way. Its officers, constituted of the distinguished members of the profession, have, in the most disinterested manner, assumed the office of caterers for their medical brethren, and the Society has every year issued in a uniform and elegant style, and at a comparatively trifling rate, books of the highest order of merit. Desirous, however, of extending their usefulness, the Society in their Report of the seventh general meeting, makes the following appeal, which we fervently hope may be responded to by the numerous members.

"In the Fifth Annual Report it was announced that arrangements were pending for the publication of a British Medical Bibliography, and the Council have now to announce that they have agreed with Dr. Kennedy, late of Ashby-de-la-Zouch, to publish his MS. Bibliography. On this work Dr. Kennedy has been occupied during the greater part of a long life, and has spared neither expense nor labor to make it, what the Council believe it will prove to be, a most complete and valuable Bibliography of British Medicine. The Council have been anxious not to publish any portion of the Bibliography, till they had made such arrangements as would justify the expectation that they might ultimately carry into effect the whole scheme. Having, however, now arranged for the preparation of the general Biblography to the end of the sixteenth century, and for the whole of the British department to the close

of the last century, it is the intention of the Council to issue at least one volume in the course of the ensuing year. It is deemed highly desirable that the issue of Bibliography should interfere as little as possible with that of the ordinary works. But in order to accomplish this object, it will be absolutely necessary to keep up, if not to augment, the present number of Members; for, in consequence of the number of volumes that have been issued for each year's Subscription, the Council have been unable to set aside any portion of the funds for the special purposes of the Bibliography, although, as it was originally intended, this they have been anxious to do. The Council therefore trust that all who have benefitted by the prosperity which the Society has hitherto enjoyed, will feel it incumbent on them to seek every opportunity of promoting its future success by inducing others to participate in its advantages."

***Deaths in Philadelphia from July 20th to Aug. 24th*, 1850. Reported by Mr. JAMES AITKEN MEIGS, Student of Medicine.**

Diseases.	Ad'ts	Chil.	Diseases.	Ad'ts	Chil.
Abscess of knee,	1	0	Enlargement of heart,	2	3
" liver,	1	0	Epilepsy,	1	1
" lumbar vertebræ	1	0	Erysipelas,	0	2
Adynamia,	1	1	Exhaustion,	3	0
Anæmia,	2	2	Fever,	0	2
Apoplexy,	12	0	" bilious,	1	1
Asthma,	4	1	" congestive,	2	1
Asphyxia,	0	1	" hectic,	0	1
Anuria,	0	2	" intermittent,	0	1
Burns,	1	0	" puerperal,	4	0
Cancer,	1	0	" scarlet,	0	13
" breast,	1	0	" remittent,	0	3
" mouth,	0	2	" typhoid,	4	5
" stomach,	4	0	" typhus,	3	2
" uterus,	3	0	Fracture,	1	0
Cancrum oris,	0	1	" of pelvis,	1	0
Casualties,	4	3	Fistula,	1	0
Cholera,	2	0	Gangrene,	1	0
Cholera infantum,	0	198	Gout,	1	0
" morbus,	5	0	Hæmoptysis,	1	0
Compression of brain,	1	0	Hemorrhage from brain,	1	3
Congestion of lungs,	2	3	" uterus,	1	0
" brain,	8	11	Inflammation of brain,	2	29
Convulsions,	0	68	" bronchi,	1	10
" puerperal,	1	0	" breast,	1	0
Cramp,	1	0	" cerebrum,	0	2
Croup,	0	8	" kidneys,	1	0
Coup de soleil,	3	0	" liver,	4	2
Cyanosis,	0	4	" lungs,	10	10
Debility, general,	10	26	" peritoneum,	2	2
Diarrhœa,	16	48	" pleura,	1	0
Disease of brain,	1	8	" larynx,	1	1
" elbow joint,	1	0	" stom. & bowels,	12	18
" heart,	6	1	" throat,	0	1
" hip,	0	1	Inanition,	2	6
" kidneys,	1	0	Intemperance,	5	0
" liver,	1	0	Jaundice,	2	2
" lungs,	1	0	Malformation,	0	5
" spine,	0	3	" of heart,	0	1
" spleen,	1	0	Mania-a-potu,	4	0
" scrotum,	1	0	Marasmus,	3	47
" stomach and bowels,	4	2	Measles,	0	6
Dropsy,	14	0	Mortification of bowels,	3	0
" of breast,	2	3	Old age,	25	0
" head,	0	50	Palsy,	7	0
Drowned,	13	9	Pertussis,	0	23
Dysentery,	54	66	Phthisis pulmonalis,	72	12
Effusion on brain,	2	11	Poisoning,	1	0
" lungs,	0	1	Purpura hemorrhagica,	0	3

Diseases.	Ad'ts	Chil.	Diseases.	Ad'ts	Chil.
Scirrhus of liver, . .	2	0	Teething, . . .	0	2
" uterus . .	1	0	Tetanus, . . .	0	1
Scrofula, . . .	1	5	Tuberculosis, . . .	1	1
Small pox, . . .	1	3	Ulceration of larynx, .	0	1
Softening of brain, . .	1	0	" throat, .	0	1
" stomach, .	0	2	Unknown, . . .	8	16
Still born, . . .	0	38	Varicella, . . .	0	1
Suicide, ...	4	0	Violence, . . .	2	1
Tabes mesenterica, .	0	5		395	828

Total, ... 1223

Of the foregoing the ages were as follows:—

Under	1	year,		-		- -	427
From	1		to	-	2,	- -	217
	2	-		-	5,	- -	100
	5	-		-	10,	- -	37
	10	-		-	15,	- -	25
	15	-		-	20,	- -	22
	20	-		-	30,	- -	81
	30	-		-	40,	- -	99
	40	-		-	50,	- -	65
	50	-		-	60,	- -	41
	60	-		-	70,	- -	54
	70	-		-	80,	- -	31
	80	-		-	90,	- -	17
	90	-		-	100,	- -	7
							1223

Included in this number, are 84 from the Almshouse, 30 from the surrounding country, and 70 people of color.

RECORD OF MEDICAL SCIENCE.

ANATOMY AND PHYSIOLOGY

Sensibility of the teeth explained on Hydrostatic principles. By J. Neill, M. D., Demonstrator of Anatomy in the University of Penn.—Dr. Neill called the attention of the College to the fact that no satisfactory explanation had yet been offered of the manner in which external impressions made upon the teeth are conveyed to their nervous pulp within. There is no difficulty in understanding the manner in which the nerves of the eye, of the olfactory organs, of the tongue, the skin, &c., are reached by the impressions for the reception and

transmission of which they are respectively designed. But in the teeth the nerves are enclosed in a bony case; and yet experience teaches us that impressions made upon the teeth do reach the nerve within, and are conveyed through it to the nervous centre. How then is it that heat, cold, acids, or pressure when applied to the external surface of the teeth affect the nervous pulp within them? Some may suppose that the impression is transmitted to the nerve through the gums. It is doubtful whether the gums in their ordinary healthy condition possess any very great amount of nervous sensibility, at any rate this explanation is untenable. The old doctrine of increased sensibility of the teeth from inflammation has passed away; the teeth have neither blood-vessels nor nerves, and consequently cannot become the seat of inflammation. Dr. Neill believed that the transmission of impressions through the teeth may be explained by a reference to the anatomical structure. The parietes of the tooth are not perfectly solid; even the enamel is composed of a congeries of hexagonal prisms, which are not in perfect juxtaposition. This may be shown by the microscope. The bony portion beneath the enamel is even less solid, it is somewhat allied to bone, and consists of a number of minute hollow tubules, which pass from the circumference to the centre of the teeth, with the internal cavity of which they communicate; these tubules are filled with a fluid secreted by the pulp. Now if the tubules, thus filled, pass from the circumference to the interior of the teeth, may not pressure applied without, by compressing the enamel and the fluid of the tubes, affect the nervous pulp within, by subjecting the latter to a species of hydrostatic pressure, the amount of which can be measured? Whatever reduces the thickness of the enamel, or uncovers any portion of the dentine increases the painful impressions caused by external pressure. Thus acid, by removing the mucus by which the teeth are ordinarily covered and perhaps a portion of the enamel, increases the sensibility to external impressions. When the teeth have been affected by acids, no disagreeable sensation is experienced until pressure is made upon them. Mr. Nasmyth, it is true, denies the tubular structure of the dentine, but it is admitted by all other writers on the anatomy of the teeth. Dr. Neill presented a specimen which would, he remarked, under the microscope, show very clearly the tubular structure of the dentine. Of the conveyance of impressions to nervous expansions by hydrostatic pressure, we have an example in the ear. Dr. Neill supposed that all those substances which are known to relieve tooth ache, when applied to the affected tooth, acted by coagulating the fluid of the tubuli, and thus preventing hydrostatic pressure.—*Transactions of the College of Physicians.*

An Exposition of M. Bernard's Discovery of the Renal Circulation. By Juriah Harriss, M. D, of Georgia, now in Paris.—The novelty and importance of the discoveries and experiments of M. Bernard have again induced me to report a few of the beautiful results he has obtained, and some of the facts he has established. He has

been for several years placing stone after stone upon the great edifice of medicine, of which he is destined to become one of the pilllars of support.

The knowledge of the excessive rapidity with which certain substances, when taken internally, pass out of the economy with the urine, and the ascertained fact that many of them when administered could not be found in the blood, but were identified in the urine, have heretofore been unexplained or have led some into the regions of absurd hypothesis. The mystery was attempted to be explained by supposing that a hidden communication existed between the stomach and kidneys, by which these substances could pass directly from one to the other. This, it is needless to say, is unphysiological and untrue.

M. Bernard has attempted to solve the mystery, and has done so by direct experimentation.

The portal circulation is entirely independent of the pulsations of the heart, and differs from all other venous circulations in the fact that there is an intervening organ between the vein and the heart. The blood, instead of passing directly from the portal vein to the heart, is forced to traverse an organ seated upon its course to the centre of circulation. The portal, and indeed the circulation in all the abdominal viscera, is under the direct influence of the pressure of the abdominal walls. This pressure is essential and indispensable to the circulation of the blood through the abdominal organs, and particularly so to its passage through the portal system. If a small opening be made in the abdomen of an animal, a portion of intestine be withdrawn, and a hydrometer be placed in one of the veins and the intestine returned into the abdomen, an oscilliation will be observed in the tube at each inspiration. The blood is elevated in the tube, because at each inspiration the abdominal cavity is diminished by the descent of the diaphragm and the contractions of the muscles. A notable pressure is thus applied to the contents of the cavity, which is in some degree measured by the elevation in the tube. The pressure is increased or diminished in proportion to the depth of the inspiration. If, after the introduction of the instrument the walls be largely opened, the oscillations will cease, because the pressure is obstructed. In this case the elevation will not only cease, but there will be a counter-current or regurgitation from the inferior vena cava and liver into the vena portæ and mesenteric veins. If prussiate of potash be placed in the inferior cava, by means of a tube, and the abdomen opened, it will regurgitate with the current of blood into the vena porta. This regurgitation occurs in paracentesis abdominis for ascites ; the pressure is removed and hence the syncope. The portal circulation is then entirely dependent upon the abdominal pressure, which last is dependent upon respiration.

During digestion, the quantity of blood in the vena portæ and liver is increased, by the absorption (of considerable albuminous and saccharine principles) which takes place by means of the mesenteric veins. While this act is being accomplished, the blood accumulates

in the liver, and distends it, in consequence of the increased supply to the portal system. At this time, either the capilliaries must take on an immense increase of activity to relieve this organ, or the quantity of circulating fluid in the vena portæ must be diminished, before reaching it. There is, in fact, a system of vessels that perform this function. Bernard made this beautiful anatomical discovery in the horse, where it is in reality, very manifest. He has there demonstrated that there is a direct communication of blood-vessels between the vena portæ, and the inferior vena cava, distinct from the communication that exist between the portal and the hepatic veins in the liver. During digestion, when the portal system is engorged with blood, a portion passes through these collateral branches into the vena cava, thereby greatly facilitating the flow from the portal vein. These branches are but small, and ramify upon the vena cava, as do the vasa vasorum upon the intestines, open abruptly into it, by several of them uniting and forming a kind of sinus.

There are in some animals muscular fibres in the walls of the vena cava ; they are particularly well marked in the horse. These fibres commence at the diaphragm, and extend down as far as the renal veins; some of them are circular, and others longitudinal. In full digestion, then, the portal system is filled, the liver is increased in volume, and the inferior vena cava and right auricle of the heart, are largely distended by the great increase in the quantity of blood absorbed from the food, by the mesenteric veins. The distension of the vena cava is easily seen in the rabbit. A kind of stagnation occurs in these organs, because the amount of blood is too great to circulate with facility through them. It is at this time that the collateral branches become of great utility, and disgorge the portal system, at the same time that the fibres of the cava, contract and force the blood down to the renal veins, and through them into the kidneys. When these fibres contract, the blood cannot pass up to the heart, because there is already a surplus and stagnation in the right auricle, and must consequently descend. But it may be asked, why does not the blood continue down the iliac and crural veins? It is because, as Bernard has demonstrated, there exists at the opening of the renal veins a valve, which will permit the blood to pass up the vena cava ; but when the current is downwards, as in digestion, it closes this vein, and the blood is compelled to pass through the renal veins to the kidneys. At the moment of the downward current, the inferior cava and renal veins can be distinctly seen to pulsate under the influence of the contractions of the muscular fibres. The blood then goes directly to the kidneys for the secretion of urine. Thus, there are many substances absorbed and passed into the portal vein, and from thence to the kidneys, without going around the general circulation.—The obscurity in which the profession has been involved, is thus beautifully dispelled. The rapidity with which certain matters were thrown out of the economy with the urine, and the fact that they could not be identified in the blood, is now easily understood and satisfactorily explained. If prussiate of potash be given to a dog upon an empty sto-

mach, it will be absorbed and carried through the liver, to the heart, and thence to the kidneys. It will be found in the renal arteries, but not in the renal veins. If, on the contrary, it be administered to him during digestion, the stagnation in the vena porta and vena cava, will necessitate the aid of the collateral anastomoses, and the contractions of the vena cava will force it down with the current of blood to the kidneys, where it will be secreted with the ordinary constituents of urine. In this case the prussiate will be found in the renal veins, and but little, if any, in the renal arteries. If an animal drink a large quantity of liquids, a portion will pass directly to the kidneys, without going around the general circulation. This vein, then, resembles the portal in its distribution.

But there is another important question to be answered. How is it, that, when there is a stagnation of blood in the superior part of the inferior vena cava, and a descending current in the lower portion, that the blood can circulate from the inferior extremities? By what route does it reach the heart? Pathology has already, in a measure at least, elucidated this point. It has been observed, and reported, that in cases of obliteration of the superior or inferior vena cava, by a tumor or other cause, that the vena azygos was much distended, and performed the function of the obliterated vein. Though this circulation occurred under a pathological cause, in all cases heretofore reported, the discovery of the renal circulation demonstates that it takes place physiologically. The stagnation of blood in the inferior cava is but a physiological obstruction to the circulation through it to the heart, and as in the case of the pathological cause, the vena azygos uudertakes the work, and conducts the blood to the central organ of circulation. Prior to this time, this was thought to be but an incidental use, arising from an abnormal cause; now, however, it is demonstrated to be a natural and physiological function, that this vein daily performs. The office of this vein is then to carry on the circulation between the inferior extremities and the heart, during digestion.

During full digestion, there is no circulation in the kidneys. The blood is carried on by both veins and arteries, and consequently has no means of exit. It is at this moment that the urine changes its character according to the nature of the food taken. If the food be azotized, the urine will be acid, and if not azotized, it will be alkaline. In an animal fasting (a rabbit) the blood reaches the kidneys alone by the arteries, and the urine will be clear and acid. But if ordinary food (non-azotized) be given him, the blood will reach the kidneys, both by the veins and arteries, and the urine will be turbid and alkaline. The phosphate of soda, that exists in abundance in the urine of a rabbit, after digestion, does not exist in the blood, but is formed in the pelvis of the kidneys, in consequence of the combination of the two kinds of urine that meet at this point. The acids of the one, unite with the alkaline principles of the other.

If medicine be administered during digestion, a great portion of it at least will pass down the renal veins to the kidneys, and be thrown off

with the urine; and thus it is that a dose of poison, which, during abstinence, would probably prove fatal, may be thrown out of the economy, during digestion, without producing serious accidents. Belladonna, or its active principle, atrophine, will not readily kill an animal during digestion, but will do so speedily when fasting. Hence we can conceive the reason why a rabbit is not killed by these strong narcotics, when the same dose will be fatal to a dog. It is because a rabbit is really always digesting; his stomach may almost be said never to be empty, even when made to fast for several days. If this animal be kept from eating a long time, he will be killed as readily as the dog.

A dose of poison, to kill an animal, must be much larger during digestion, than during abstinence.

In reptiles, there is a peculiar arrangement of the vena portæ. There exists in them two venæ portæ: the one that is found in other animals and distributed to the liver, and the other that passes to the kidneys, and may be styled the renal vena portæ. This arrangement in man is assimilated by the renal circulation.

PATHOLOGY AND PRACTICE OF MEDICINE.

Of the peculiarities of Structure in Individual Parts and Organs and particular regions of the Body in the Tuberculous Predisposition. By Henry Ancell, Esq.,—The morbid state of the blood and blastema, and the malnutrition of cells and fibres are not only exhibited in the various tissues, but some remarkable peculiarities are observed in the form and development and the general characteristics of individual parts made up of different tissues. Generally there is a defect of symmetry, with a tendency, according to Hufeland and others, to the disunion of various parts of the body at the median line. The median line is also frequently removed from the centre, the lateral halves of the body being unequal: a confirmation, it is remarked by Lugol, of the worst augury, as respects future disease. Many of the features of the face present highly characteristic appearances. In some of the most unequivocal cases the structure of the eyes exhibit several peculiarities. A bluish tint of the sclerotic coat, even in adult age, resembling that presented in the earliest infancy, is very common; countenancing the idea, already several times adverted to, of an arrest of development. This coat is sometimes pearl-white, which, according to Hufeland, betrays a tendency to the mesenteric variety of the disease; it is also frequently traversed by streaks of enlarged and injected blood-vessels. The eyes, at other times, particularly in young children, are haggard and inexpressive, and the Meibomian glands are liable to be spuriously hypertrophied. The eyelids are sometimes thick or œdematous. The mouth is unsymmetrical—small or large, or too much arched; the upper or lower lip, or both lips, are liable to become tumid from a spurious hypertrophy, consisting of an infiltration of the mucous, cutaneous, and cellular tissues of which they are composed; and as stated of the cellular tissue itself, and from a similar cause, this tumidity is subject to a rapid increase or decrease from slight variations of the general health, and is frequently

more perceptible in the morning than during the remainder of the day. In the upper lip, the swelling frequently extends to the columnæ nasi and lower part of the nostrils, and there is occasionally a chap in the middle of the lip. The nose is sometimes swollen, red, and shining, and the alæ nasi spread in a remarkable manner. The lobes of the ears are also sometimes affected with a tumidity similar in its nature to that of the lips. These peculiarities, with the modified conditions of the dermoid, cellular, and muscular structures incidental to the tuberculous predisposition, according to their degree and varieties, and the mode in which they are combined, give the countenance several well-marked aspects. There is the pale, pasty, full cheek, with large upper lip and wide spread alæ nasi of early childhood; the unnaturally fair or white complexion, resembling blanched wax, with large and conspicuous veins, combined with the roseate hue already described; the full dark eye, with dilated pupil, long eyelashes, regular features, placid expression, but extremely delicate skin; or similar features, with equally fine skin, and a fair florid complexion. There are combinations, sometimes of great beauty, sometimes the contrary, among the associations, which, with other peculiarities belonging to the tuberculous habit, strike the experienced medical observer, and frequently lead him at once to the inference, that the structures have been developed from a defective blastema, and that probably they continue to be nourished from vitiated blood endowed with a low degree of vitality. The peculiarities of tint in different parts of the body, as in the skin, hair, and capillaries, depend in part upon the tenuity and transparency of the tubes and vessels themselves, which traverse their structures, allowing the fluids, whether circulating or stagnant, to reflect the rays of light through them, and in part upon a change of tint of the parenchyma, the whole of the phenomena being ultimately referrible to the blood; which is not only, as we have seen, deficient in red corpuscles, but in which the yellow and blue coloring principles of the liquor sanguinis have probably undergone some unknown changes, either in quantity or quality, involving modifications of tint in the blastema of the different organic tissues.

In the tuberculous predisposition the lymphatic glands over the whole body, but most especially in the neck, are believed to be larger than usual, although no accurate observations have been made on this point. They are unquestionably, very prone to become enlarged, and in that state are regarded as one of the most certain diagnostic signs of that important variety of tuberculosis which comes under the designation of scrofula. The same remark applies to the tonsils, which, without any apparent deviation from the usual state of health, are liable to become spuriously hypertrophied, sometimes to the extent of affecting the voice and respiration. Baumes refers the habitual enlargement of the glands to an increased quantity of the blastema or nutritive fluid of the cellular tissue of these organs, which fluid he believes to be of an acescent quality. We have given the grounds upon which the acid theory, of tuberculous affections generally, rested, and there are no direct experi-

ments to prove this acidity in the glands. The abdomen, particularly in tuberculous infants and children, is frequently very much enlarged; a circumstance readily explained by the weak organization of the intestinal tunics and of the abdominal parietes, giving rise to habitual over-distension from flatulence and other dyspeptic effects produced by slight causes, and in some cases this distension is increased by enlargement of the mesenteric glands, which are liable to changes analogous to those of the external glands.

As respects the viscera, great doubt hangs over the real condition of their organization in the tuberculous predisposition. Pathologists have made numerous observations of the morbid appearances exhibited after death from the different varieties of tuberculosis; but in almost all these cases some local disease has for a long time existed, and contributes to destroy the patient. These pathological appearances will have to be considered under the head of tuberculosis in a state of actual disease; but it is difficult, if not impossible, to draw any inference from them as to the state of the same organs, where only the predisposition to disease exists. No doubt they participate in the general malnutrition of the elementary tissues of which they are composed, and the defective cell-growth constituting the malnutrition, with the deteriorated qualities of the blood which pervades the organs, occasion the functional derangement about to be described. Most likely this constitutes the whole of their pathology in the tuberculous predisposition;—an inference supported by the fact, that where tuberculous subjects have died of diseases other than tubercular disease, no constant pathological appearances are recorded.

Before terminating this account of the structural peculiarities of the tuberculous predisposition, the condition of the heart demands special consideration. It is very generally admitted that, in some tuberculous diseases at least, the heart is within its usual dimensions, and this would be consistent with the malnutrition of its cellular and fibrous structures and corresponding with malnutrition of these tissues generally. According to Bigot, of Geneva, the linear dimensions of the heart, are *cæteris paribus*, in every way less in phthisis than under ordinary circumstances. Louis observed in 112 cases, in which death was caused by phthisis, that the heart, in the majority, was small, and very frequently not more than one-half or two-thirds its ordinary size. Dr. Clark states that he regards a small heart as a strong "predisposing cause" of consumption, and Mr. F. A. Bulley, and I believe other writers in our own country, have insisted upon this point. This, it is necessary, however, to state, has been disputed by others. Andral appears to have found the heart larger than nature in a majority of phthisical subjects, and the late Dr. Clendenning arrived at a somewhat similar conclusion; he found that the heart weighed considerably more in phthisical subjects than in health, but in chronic diseases generally there was an increase of weight in the viscera; and the increase or weight in the heart in phthisis, relative to the increase in weight of the other viscera, was very small indeed. New observations are required as to the size, density, and general nutritive condition of the

heart in tuberculosis, distinguishing as accurately as possible its state of nutrition in the earlier and later stages of the affection, in the general disease, and after local affections of the viscera, particularly of the lungs, have for a long time existed, and previous and subsequent to the supervention of the hectic fever. I have been in the habit, for many years past, of examining the heart in fatal cases of phthisis, and to the sight and touch it has almost invariably appeared to me to be of small dimensions or defective substance. The physical signs derived from percussion of the chest have also, in the main, favored this view. In the minor degrees of the tuberculous predisposition, in which the cellular structures alone appear to have been imperfectly developed, leaving the fibrous structures comparatively intact the heart may not only be as large as natural, in relation to the organization of the individual, but even larger; still I consider that in the more decided cases the heart is small and its nutrition imperfect, and that this condition of the organ is in relation to the low vitality of cells, cytoblastema, and blood; and from the large amount of fibrous, as compared with cellular structure, the malnutrition of this organ may be very unequal in different cases.—*London Med. Times.*

SURGERY.

Lithotomy in a very young Boy. (Under the care of Mr. Avery.)—We have often expressed the opinion, that the cause of the frequent formation of calculus in the children of the laboring classes would be a very interesting subject of inquiry for the pathologist. No doubt locality, food, and diathesis have a great deal to do with this pathological fact, and it would appear that diathesis is sometimes so strongly marked, that a child may be born either with a strong propensity to renal concretion, or with a calculus in the bladder.

The little patient upon whom Mr. Avery lately operated, affords an excellent illustration of congenital stone in the bladder. The boy is now only two years and a few months old; he had calculous symptoms from birth, and when first seen by Mr. Avery suffered very much from them.

The child belongs to agriculturists, living in Wiltshire; the mother has had several other children, none of whom were affected with any congenital malformation or disease; they are all tolerably strong and healthy, and the parents who enjoy the advantage of a country life, and labor in the open air, are of a good constitution, and exempt from any gouty or lithic diathesis. No particular circumstances accompanied the child's birth, but soon after it, and whilst he was being suckled, the mother's attention was drawn to the colour of his urine, which she noticed to be darker than she had known it to be with her other children. She was soon struck, likewise, with a peculiar way the child had of putting his hand on the hypogastrium, when only a few months old, as if anxious to relieve pain in that region. The urine, in the meantime, became darker, and soon assumed the appearance of blood, which circumstance naturally very much alarmed the mother.

When the child was about one year old, symptoms of a still more serious kind occurred; the mother stated that the abdomen became suddenly tympanitic, and the scrotum "as black," as she forcibly expressed it, "as your hat." No urine was expelled whilst these symptoms were present: but the child, to whose aid a medical man had been called, was relieved by emollient applications, &c. It may be surmised that the irritation caused by the presence of the calculus must have been great when these congestive phenomena appeared, and it is probable that the stone had accidentally been so placed as to obstruct for a time the flow of the urine.

The child was sounded at various times in the country, the surgeons in attendance were in doubt about the case, and the little patient was sent to Mr. Avery, in order that the question might be solved.

On admission, Mr. Avery found the child in tolerable good health, but its sufferings were very great whenever micturition took place, which function was performed very often. The child, as is generally the case in this affection, was ever pulling the prepuce, the mother stating that he was, while at home, in the constant habit of doing so, and that it grieved her to see him suffer so much every time he evacuated the bladder. Mr. Avery having passed a small sound, ascertained the presence of the calculus; the striking of the instrument against the stone gave the impression that the latter was very small; and Mr. Avery bearing in mind the advantages of lithotomy over lithotrity in the case of children, resolved to perform the first of these operations.

On the 17th of June, the child was brought into the theatre, and having been rendered insensible by a piece of lint, sprinkled with chloroform, being lightly held over the face, Mr. Avery made the usual incisions, and cautiously extracted from the bladder a round stone about the size of a horse-bean. On examining it at first, it appeared strange that the symptoms should have been so distressing at the very onset of the affection, when the stone, as it fairly may be supposed, was considerably smaller. Still foreign bodies, however small, will cause disturbance according to the susceptibility of the organ where they happen to be placed, and the age of the patient.

The child lost very little blood, and was removed, while still under the influence of chloroform. The progress of the little patient was extremely favorable; three days after the operation, the urine passed almost entirely per urethram; but in a few days it again flowed almost wholly through the wound, with considerable pain and irritation about the part. This change was, however, of short duration; and six days after the extraction of the stone, the urine again passed through the urethra, and gradually was entirely evacuated by the natural passage, the wound being quite cicatrised. On the nineteenth day the part was perfectly closed, and the boy left the hospital quite restored, about five weeks after admission. The stone was examined by Mr. John Quekett, and found composed of a nucleus of oxalate lime, invested by a layer of phosphates.

This case affords some confirmation to the opinion that children may be visited by any disease in utero, as it would appear that in this in-

stance the patient was affected with stone, either in the kidney or bladder, before he saw the light. Such cases likewise show the necessity of giving proper attention to apparently trifling symptoms in children: frequency of micturition, occasional pain in evacuating the bladder, the habitual pressure of the hand on the hypogastrium, should not be overlooked, especially in boys, and suspicions be excited, that these symptoms *may* be owing to a congenitally-formed calculus. It may likewise be observed that if the early symptoms had suggested the employment of an instrument, and a slight dilatation of the urethra at an early period, it is more than probable that the calculus, in its then small state, would have been evacuated.—*London Lancet.*

MATERIA MEDICA AND THERAPEUTICS.

Nutritive Properties of Coffee.—M. Gasparin stated, a short time ago, before the Academy of Sciences of Paris, that the journeymen miners in the neighborhood of Charleroi preserve robust health and great muscular strength by using an article of food containing but half the nutritive principles which are found in the usual nourishment used in the rest of Europe among people occupied in the same manner. The difference lies principally in the large quantities of coffee which the Charleroi miners consume. The journeyman, before going to his work in the morning, takes half a pint of coffee (half chicory and half coffee) and a good slice of bread-and-butter. He carries with him into the mine another pint of coffee and a few rounds of bread-and-butter; and after returning home in the evening, he sups upon potatoes and cabbage, or some other green vegetable, and concludes his meal with a repetition of coffee and bread-and-butter. The consumption per diem consists in about two pounds of bread, two ounces of butter, one ounce of coffee, and another of chicory, and a pound and a half of cooked vegetables. Meat is eaten on Sundays and holidays only, and the miner drinks no fermented liquors during the week, his only beverage being his coffee. On Sundays, however, he takes a couple of quarts of beer. Thus it is calculated that such a laborer consumes only about four drachms of nitrogen per diem, whilst in other places about double the quantity is required. It would appear from Boecker's investigations, (see *The Lancet*, vol. i. 1850, p. 119,) that the amount of urea ejected in the twenty-four hours is diminished to one-half by the use of coffee. This substance would, then, seem to prevent the loss of nitrogen, and thus its nutritive effects might be explained. The garlic-bulbs, so much used in the south of France, seem to act in a similar manner. It has, on the other hand, been ascertained by M. Barral, that common salt increases the proportion of urea and uric acid, so that more substantial nourishment is required by those who use table salt. Government might very judiciously, therefore, favor the use of coffee among the humbler classes, and free it from all duty. It would be interesting to institute a few inquiries regarding the effects produced in this country by the use of tea.—*Ibid.*

On a probable danger from the Use of Cod-liver Oil. By Dr. Benson.—At a recent meeting of the Surgical Society of Ireland, Dr. Benson made the following statement regarding cod-liver oil:—

It was not to be expected that a remedy of so much power could be used with impunity in all cases. Having such efficacy in checking emaciation, in restoring the wasted flesh, and bringing back color to the faded cheek, it might be anticipated that it would in some cases of phthisis occasion a congested condition of the lung, and even give a tendency or prove a predisposing cause to pneumonia; and this was, in fact, what he thought he had observed in some instances, and it was to this he begged to call the attention of the meeting.

It so happened that in almost every patient who died of phthisis under his care while using cod-liver oil, he found the lung congested and consolidated, not only in the neighbourhood of the tubercles, but through nearly the entire of both lungs. This morbid condition, it is true, is often met with where no oil has been used, but he was struck with the greater frequency of it in the post-mortems he had made where the oil was freely administered. ('Dublin Med. Press.')—*Med. Gazette. Feb.* 1, 1850, *p.* 216.

New Adhesive Dressing. By Dr. Mellez.—From his dissatisfaction with the ordinary adhesive dressings, Dr. Mellez was led to adopt a solution of "gum lac," which is much used in the arts as a varnish and adhesive.

He uses a solution of this substance in spirit of wine, made with the aid of a moderate heat, and in such proportion as to give a mixture having the consistence of jelly, or nearly approaching to it. It can be made in a common wide-mouthed bottle, and a simple cork suffices for its preservation. When he uses it, he spreads it with a spatula upon pieces of cloth or taffetas, cut to the size required. According to him, it possesses all the good qualities of collodion, and even in a higher degree than that substance—viz., contraction during its dessication, impermeability to air, absence of all irritating action on the skin or wound, intimate adherence to the skin, and resistance to the action of water, fatty matters, or the discharges from the wound. It has not, like collodion, the quality of being colourless; but he believes that it might, if required, be decolorized, and, if applied upon animal membrane, would furnish a transparent dressing. It does not dry so quickly as collodion, but that is the only advantage the latter possesses. The lac dressing, however, does not require so long time as to be inconvenient to the surgeon. Moreover, it is not indispensible for the lac, as it is for the collodion, that the skin be absolutely dry. It has further, the advantage (not to be overlooked) of being more moderate in cost. ('Bulletin de Théraputique.')—*Monthly Journal, June* 1850, *p.* 575.

Various Surgical Uses of Vulcanized India-Rubber.—Vulcanized caoutchouc has now become very common in the arts, and is likewise

used in surgery. A systematic and extensive application of this substance has lately been made at Paris, for surgical purposes; and Dr. GARIEL presented to the Surgical Society of that capital, on the 19th of September last, a series of apparatuses, made of vulcanized caoutchouc, for traction, compression, confinement, dilatation, suction, &c. Dr. Gariel prepares the substance by dipping the caoutchouc into a saline bath, and thereby renders the India-rubber perfectly and regularly elastic, gives to it an immense force of cohesion, prevents fatty bodies or the most energetical chemical agents (nitrate of silver, nitric, sulphuric, and muriatic acids, &c.,) from acting upon it, and causes it to preserve its elasticity at extreme temperatures. It should be remembered that ordinary caoutchouc possesses none of the above-named properties. One peculiarity pervades the numerous kinds of apparatuses which Dr. Gariel laid before the Society, and that is, a very ingeniously-contrived mode of insufflating various tubes, when placed upon, or introduced into, the body, giving them a greater diameter, and increasing their power of pressure at will. We may mention a tube used for arresting epistaxis, which will plug the posterior nares by insufflating it. Pessaries and a great number of variously shaped cushions, intended for many different surgical uses are also made to change their size at will, by filling them more or less with air. The Society expressed its highest approval of these applications of vulcanized caoutchouc.—*Lancet, Dec,* 1, 1848, *p.* 579.

On the Use of Acetic Acid in Preventing the Spread of Scarlatina. By Dr. J. WEBSTER, Consulting Physician to the St. George's and St. James's Dispensary.—[Dr. Webster recommends frequent sponging of patients affected with scarlatina, with tepid vinegar and water, especially in the early stages, when the skin is hot or the pulse accelerated. He states that he has great confidence in the efficacy of this means in preventing the spread of the disease; and gives several cases in illustration of this.]—*London Journal, Dec.* 1849, *p.* 1295.